



TARGA

611 Louisiana, Suite 2100
Houston, TX 77002
713.584.1000
www.targaresources.com

January 31, 2019

US EPA, Region 8
1595 Wynkoop Street, 8P-AR
Denver, CO 80202

RE: *True Minor Oil and Gas Source Registration – Part 1*
Targa Badlands LLC
Buffalo Compressor Station
Fort Berthold Reservation, McKenzie County, North Dakota

Targa Badlands LLC (Targa) is planning to construct the Buffalo Compressor Station, a natural gas compressor station located within the exterior bounds of the Fort Berthold Indian Reservation in McKenzie County, North Dakota. Targa is herein submitting the required information to register the Buffalo Compressor Station under the Federal Implementation Plan (FIP) for True Minor Oil and Gas Sources per the requirements of Title 40 of the Code of Federal Regulations (40 CFR) Part 49.

As part of this submittal, Targa is proposing to install the following components at the facility:

- Four (4) compressors driven by internal combustion engines fueled by natural gas (EU 1, EU 2, EU 3, EU 4);
- Two (2) Pig Receivers (EU 5);
- One (1) produced water tank (EU 6) and its associated loading (EU 16);
- Three (3) condensate tanks (EU 7, EU 8, EU 9) and their associated loading (EU 16);
- One (1) separator tank (EU 10);
- One (1) methanol storage Tank (EU 11);
- Nine (9) insignificant emission sources: four (4) lube oil tanks, four (4) coolant tanks, and one (1) triethylene glycol tank (TK 1-9);
- One (1) vapor combustor (EU 12);
- One (1) glycol dehydrator (EU 13);
- One (1) glycol reboiler (EU 14);
- Various fugitive emissions associated with equipment leak components (EU 15)

This application satisfies the requirements to submit the Part 1 information at least 30 days prior to start of construction of the facility. We appreciate your assistance with this FIP Registration. If you have any questions or comments about the information presented in this letter, please do not hesitate to contact me at (713) 584-1292 or twallace@targaresources.com.

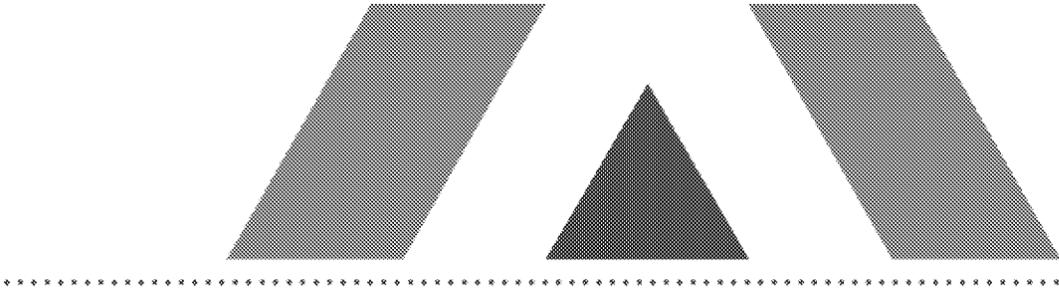
Sincerely,

Tammy Wallace
Senior Environmental Specialist
Targa Badlands LLC

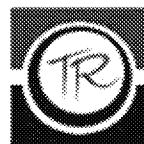
Attachments

cc: Mr. Mitch Anderson, Targa Badlands LLC
Mr. Rydeil Klosterman, Trinity Consultants

ED_004016P_00013138-00001



TRUE MINOR OIL AND GAS SOURCE
REGISTRATION
FEDERAL IMPLEMENTATION PLAN - PART 1
Targa Badlands LLC > Buffalo Compressor Station



TARGA

TARGA BADLANDS LLC

811 Louisiana Street, Suite 2100
Houston, TX 77002-1400

Prepared By:

TRINITY CONSULTANTS
7300 Hudson Boulevard North, Suite 240
Oakdale, MN 55128
(651) 275-9900
Fax: (651) 351-3987

January 2019

Project 182401.0074

Trinity
Consultants

Environmental solutions delivered uncommonly well

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY 1-1

1.1. General Applicant Information1-2

2. PROCESS AND FACILITY DESCRIPTION 2-1

2.1. Description of Operations.....2-1

2.2. Process Flow Diagram.....2-2

2.3. Identification of Emission Units.....2-3

2.4. Operating Schedule.....2-3

2.5. Air Pollution Controls2-3

2.6. Compliance Monitoring Devices/Activities.....2-4

APPENDIX A: TRUE MINOR SOURCE FIP REGISTRATION FORM - PART 1 A-1

APPENDIX B: ENDANGERED SPECIES ACT AND NATIONAL HISTORIC PRESERVATION ACT REVIEW
DOCUMENTATION B-1

LIST OF TABLES

Table 2-1. Emission Unit Summary	2-3
Table 2-2. List of Controlled Emission Units	2-3

1. EXECUTIVE SUMMARY

Targa Badlands LLC (Targa) is herein submitting the required information to register the proposed Buffalo Compressor Station under the Federal Implementation Plan (FIP) for True Minor Oil and Gas Sources per the requirements of Title 40 of the Code of Federal Regulations (40 CFR) Part 49. The Buffalo Compressor Station will be located at latitude 47.66617° North and longitude 102.73642° West in McKenzie County, North Dakota, within the exterior bounds of the Fort Berthold Indian Reservation. The site will be used to compress and dehydrate natural gas from nearby wells (SIC 1311, NAICS 211111). This is the initial Part 49 registration for the site.

Targa is proposing to install the following equipment at the facility:

- Four (4) compressors driven by internal combustion engines fueled by natural gas (EU1, EU 2, EU 3, EU 4);
- Two (2) Pig Receivers (EU 5);
- One (1) produced water tank (EU 6) and its associated loading (EU 16);
- Three (3) condensate tanks (EU 7, EU 8, EU 9) and their associated loading (EU 16);
- One (1) separator tank (EU 10);
- One (1) methanol storage Tank (EU 11);
- Nine (9) insignificant emission sources: four (4) lube oil tanks, four (4) coolant tanks, and one (1) triethylene glycol tank (TK 1-9);
- One (1) vapor combustor (EU 12);
- One (1) glycol dehydrator (EU 13);
- One (1) glycol reboiler (EU 14);
- Various fugitive emissions associated with equipment leak components (EU 15)

This application satisfies the requirements to submit the Part 1 information at least 30 days prior to start of construction of the facility. The Part 1 Form is provided in Appendix A of the application. The Environmental Species Act (ESA) and National Historic Preservation Act (NHPA) review, which is required to be submitted along with the Part 1 Form, is provided in Appendix B.

1.1. GENERAL APPLICANT INFORMATION

Listed below, as well as in the application form provided in Appendix A, is the point of contact for the Buffalo Compressor Station registration application.

Project Site: Targa Badlands LLC – Buffalo Compressor Station
SW/4, NW/4, S1, T148N, R95W
McKenzie County, North Dakota

Applicant Contact: Tammy Wallace
Senior Environmental Specialist
Targa Badlands LLC
811 Louisiana Street, Suite 2100
Houston, TX 77002
(713) 584-1292

2. PROCESS AND FACILITY DESCRIPTION

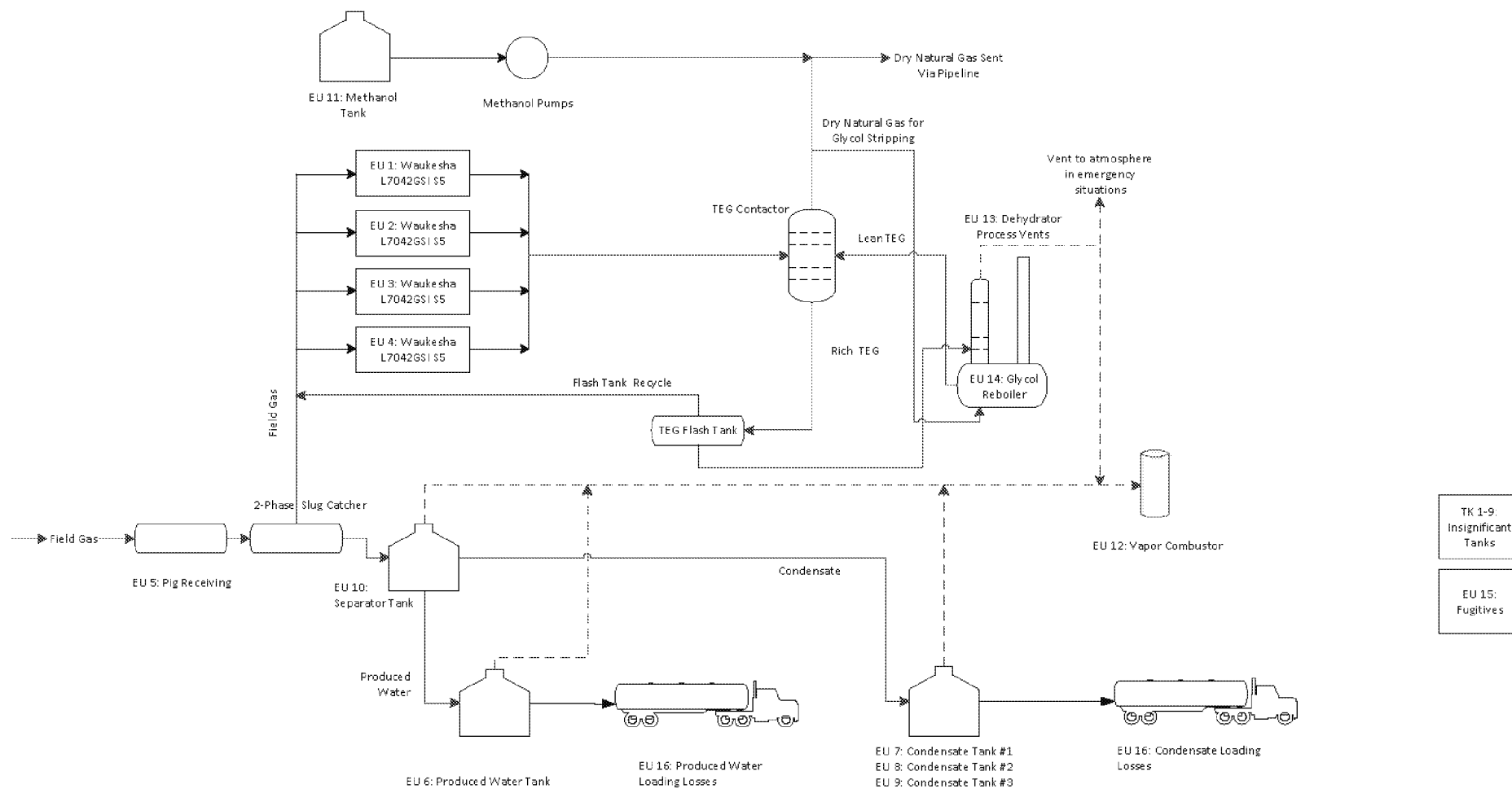
2.1. DESCRIPTION OF OPERATIONS

The inlet gas flows from gas lines through a Pipe Inspection Gauge (PIG) receiver to a 2-phase slug catcher. Condensate and produced water exit the bottom of the slug catcher and is routed to an atmospheric gun-barrel separator tank; field gas exits the overhead of the slug catcher. The field gas is routed to one of the four parallel 3-stage compressors and dehydrated before being discharged into the pipeline.

Once the condensate and produced water mixture is inside the separator tank, the flash gas from the mixture, caused by either ambient heating or pressure drop bubbles, is routed to the vapor combustion unit. The condensate and produced water are then separated by gravity and are sent either to the condensate tanks or the produced water tank. From their respective tanks they are loaded and trucked from the facility. Working, breathing, and flash emissions from the condensate and produced water tanks are routed to the vapor combustion unit.

The rich glycol used for dehydrating the field gas is first directed to a flash tank to remove entrained hydrocarbons before being sent to the glycol dehydrator and reboiler. The flash tank emissions are captured, recycled, and recompressed to be sent back into the pipeline. The glycol dehydrator vapor stream will be directed to the vapor combustion unit. Field gas is used as a stripping gas in the process to produce lean glycol. Methanol is injected at different points in the process using air-assisted pneumatic pumps to prevent hydrates from forming. A process flow diagram is presented in Section 2-2.

2.2. PROCESS FLOW DIAGRAM



2.3. IDENTIFICATION OF EMISSION UNITS

Table 2-1 presents the complete list of the proposed emission units at the site. This table includes the proposed Emission Unit ID (EU) and Emission Point Number (EPN) for each unit at the site, as well as equipment descriptions of each emission unit in this Part 49 Registration application where applicable.

Table 2-1. Emission Unit Summary

Emission Unit ID	Emission Point ID	Description	Capacity/Rating
1	1	Waukesha L7042GSI S5	1500 HP
2	2	Waukesha L7042GSI S5	1500 HP
3	3	Waukesha L7042GSI S5	1500 HP
4	4	Waukesha L7042GSI S5	1500 HP
5	5	(2) Pig Receivers	12" Nominal 16" Oversize Chamber
6	12	Produced Water Tank	400 bbl
7	12	Condensate Tanks	400 bbl
8	12	Condensate Tanks	400 bbl
9	12	Condensate Tanks	400 bbl
10	12	Separator Tank	400 bbl
11	11	Methanol Tank	2000 gal
12	12	Vapor Combustor Unit	--
13	12	Dehydrator Process Vents	24 MMScf
14	14	Glycol Reboiler	0.45 MMBtu/hr
15	15	Fugitive Emissions	--
16	16	Produced Water Truck Loading	--
16	16	Condensate Truck Loading	--
TK1-9	INSG	Various Tanks	500 gal

2.4. OPERATING SCHEDULE

The Buffalo Compressor Station is expected to operate 24 hours per day, 7 days per week, and 52 weeks per year (8,760 hours per year). Targa intends to construct the new site in Quarter 1 of 2019, and start of operation is expected soon after construction is complete.

2.5. AIR POLLUTION CONTROLS

Table 2-2 lists the control devices to be installed at the Buffalo Compressor Station. All other equipment onsite is uncontrolled.

Table 2-2. List of Controlled Emission Units

Emission Unit ID	Emission Point ID	Description	Controls	Control Requirement
1	1	Waukesha L7042GSI S5	NSCR	NSPS JJJJ/NESHAP ZZZZ
2	2	Waukesha L7042GSI S5	NSCR	NSPS JJJJ/NESHAP ZZZZ

Emission Unit ID	Emission Point ID	Description	Controls	Control Requirement
3	3	Waukesha L7042GSI S5	NSCR	NSPS JJJJ/NESHAP ZZZZ
4	4	Waukesha L7042GSI S5	NSCR	NSPS JJJJ/NESHAP ZZZZ
6	12	Produced Water Tank #1	Vapor Combustor (EU 12)	N/A (Not Subject to NSPS 0000a as PTE < 6 tpy). No controls are claimed in calculating emissions for this unit.
7	12	Condensate Tank #1	Vapor Combustor (EU 12)	NSPS 0000a
8	12	Condensate Tank #2	Vapor Combustor (EU 12)	NSPS 0000a
9	12	Condensate Tank #3	Vapor Combustor (EU 12)	NSPS 0000a
10	12	Gun-Barrel Separator Tank	Vapor Combustor (EU 12)	NSPS 0000a
13	12	Dehy Process Vents	Vapor Combustor (EU 12)	N/A (Not Subject to control requirements of MACT HH). No controls are claimed in calculating emissions for this unit.

Targa will include a detailed regulatory review for each unit in the Part 2 application.

2.6. COMPLIANCE MONITORING DEVICES/ACTIVITIES

In order to demonstrate compliance with applicable FIP requirements, Targa will perform applicable monitoring and testing per any applicable NSPS and/or MACT regulations contained in the FIP. For sources that are not subject to any monitoring and testing requirements in the NSPS and/or MACT regulations, Targa will utilize industry best management practices and will maintain and operate site equipment per manufacturer recommendations to minimize air emissions.

APPENDIX A: TRUE MINOR SOURCE FIP REGISTRATION FORM - PART 1



United States Environmental Protection Agency

<https://www.epa.gov/tribal-air/tribal-minor-new-source-review>

January 4, 2017

Part 1: Submit 30 Days Prior to Beginning Construction -- General Facility Information

FEDERAL IMPLEMENTATION PLAN FOR TRUE MINOR SOURCES IN INDIAN COUNTRY IN THE OIL AND NATURAL GAS PRODUCTION AND NATURAL GAS PROCESSING SEGMENTS OF THE OIL AND NATURAL GAS SECTOR

Registration for New True Minor Oil and Natural Gas Sources and Minor Modifications at Existing True Minor Oil and Natural Gas Sources

Please submit information to:

[Reviewing Authority] US EPA Region 8
[Address] 1595 Wynkoop Street, 8P-AR
[Phone] Denver, Co 80202

A. GENERAL SOURCE INFORMATION (See Instructions Below)

1. Company Name Targa Badlands LLC		2. Source Name Buffalo Compressor Station	
3. Type of Oil and Natural Gas Operation Natural Gas Compression and Dehydration		4. New Minor Source? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		5. Minor Source Modification? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
6. NAICS Code 211111		7. SIC Code 1311	
8. U.S. Well ID(s) or API Number(s) [if applicable] N/A			
9. Area of Indian Country Fort Berthold Indian Reservation	10. County McKenzie	11a. Latitude 47.66617778	11b. Longitude -102.73641667

B. CONTACT INFORMATION (See Instructions Below)

1. Owner Name Francis Foret	Title Senior VP Operations
Mailing Address 811 Louisiana Street, Suite 2100, Houston, TX 77002-1400	
Email Address fforet@targaresources.com	
Telephone Number 713-584-1138	Facsimile Number 713-584-1522
2. Operator Name (if different from owner) Same as Company Contact	Title
Mailing Address	
Email Address	
Telephone Number	Facsimile Number
3. Source Contact Tammy Wallace	Title Senior Environmental Specialist
Mailing Address 811 Louisiana Street, Suite 2100, Houston, TX 77002-1400	
Email Address twallace@targaresources.com	
Telephone Number 713-584-1292	Facsimile Number 713-584-1522

4. Compliance Contact	
Mitchell Anderson	Title Senior Environmental Specialist
Mailing Address 1939 125th Ave. NW, Watford City, ND 58854-9248	
Email Address mitchellanderson@targaresources.com	
Telephone Number 701-842-3315	Facsimile Number

C. ATTACHMENTS

Include all of the following information as attachments to this form:

- ☒ Narrative description of the operations.
- ☒ Identification and description of all emission units and air pollution generating activities (with the exception of the exempt emissions units and activities listed in §49.153(c).
- ☒ Identification and description of any air pollution control equipment and compliance monitoring devices or activities that are expected to be used at the facility.
- ☒ Estimated operating schedules.
- ☐ If satisfying the requirements under §49.104(a)(1), documentation that another federal agency has complied with its requirements under the Endangered Species Act (ESA) and the National Historic Preservation Act (NHPA) when authorizing the activities for the facility/activity covered under this registration. The appropriate documents shall clearly show that the other federal agency had met its obligations under both the ESA and NHPA. A simple reference to a Record of Decision or other final decision document will not be acceptable. Examples of acceptable documentation would be a letter from the U.S. Fish and Wildlife Service field office (for ESA) or a historic preservation office (for NHPA) stating they agree with the assessment conducted by the other federal agency for the subject project and that the requirements of those statutes have been met. The documentation shall be submitted within the Part 1 registration.
- ☒ If satisfying the requirements under §49.104(a)(2), the letter provided by the Reviewing Authority indicating satisfactory completion of the specified screening procedures to address threatened or endangered species and historic properties. The documentation shall be submitted under the Part 1 registration. (The procedures are contained in the following document: "Procedures to Address Threatened or Endangered Species and Historic Properties for the Federal Implementation Plan for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector," <https://www.epa.gov/tribal-air/tribal-minor-new-source-review>).
- ☐ Other.

Instructions for Part 1

Please answer all questions. If the item does not apply to the source and its operations write "n/a". If the answer is not known write "unknown".

A. General Source Information

1. Company Name: Provide the complete company name. For corporations, include divisions or subsidiary name, if any.
2. Source Name: Provide the source name. Please note that a source is a site, place, or location that may contain one or more air pollution emitting units.
3. Type of Operation: Indicate the generally accepted name for the oil and natural gas production or natural gas processing segment operation (e.g., oil and gas well site, tank battery, compressor station, natural gas processing plant).
4. New True Minor Source: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
5. True Minor Source Modification: [Per Federal Indian Country Minor New Source Review Rule, 40 CFR 49.153].
6. North American Industry Classification System (NAICS): The NAICS Code for your oil and natural gas source can be found at the following link for North American Industry Classification System:
<http://www.census.gov/eos/www/naics/>.
7. Standard Industrial Classification Code (SIC Code): Although the new NAICS code has replaced the SIC codes, much of the Clean Air Act permitting processes continue to use these codes. The SIC Code for your oil and natural gas source can be found at the following link for Standard Industrial Classification Codes:
http://www.osha.gov/pls/imis/sic_manual.html.
8. U.S. Well ID or API Number: Unique well identifier as assigned by the Federal or State oil and gas regulatory agency with primacy, using the American Petroleum Institute (API) Standard for number format (pre-2014) or the Professional Petroleum Data Management (PPDM) Association US Well Number Standard (2014-present). Provide IDs for all oil and natural gas production wells associated with the facility, if applicable. May not be applicable for downstream production sources, such as compressor stations.
9. Area of Indian Country: Provide the name of the Indian reservation within which the source is operating.
10. County: Provide the County within which the source is operating.
11. Latitude & Longitude (11a. and 11b.): Provide latitude and longitude location(s) in decimal degrees, indicating the datum used in parentheses. These are GPS (global positioning system) coordinates. This information should be provided in decimal degrees with 6 digits to the right of the decimal point, indicating the datum used in parentheses (i.e., NAD 27, NAD 83, WGS 84 – WGS 84 is preferred over NAD 27).

B. Contact Information

Please provide the information requested in full.

1. Owners: List the full name (last, middle initial, first) of all owners of the source.
2. Operator: Provide the name of the operator of the source if it is different from the owner(s).
3. Source Contact: The source contact must be the local contact authorized to receive requests for data and information.
4. Compliance Contact: The compliance contact must be the local contact responsible for the source's compliance with this rule. If this is the same as the Source Contact please note this on the form.

C. Attachments

The information requested in the attachments will enable the U.S. Environmental Protection Agency (EPA) to understand the type of oil and natural gas source being registered.

Disclaimers:

The public reporting and recordkeeping burden for this collection of information is estimated to average 6 hours per response. Send comments on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques to the Director, Collection Strategies Division, U.S. Environmental Protection Agency (2822T), 1200 Pennsylvania Ave., NW, Washington, D.C. 20460. Include the OMB control number in any correspondence. Do not send the completed form to this address.

Information in these forms submitted in compliance with the final Federal Indian Country Minor New Source Review rule may be claimed as confidential. A company may assert a claim of confidentiality for information submitted by clearly marking that information as confidential. Such information shall be treated in accordance with EPA's procedures for information claimed as confidential at 40 CFR part 2, subpart B, and will only be disclosed by the means set forth in the subpart. If no claim of confidentiality accompanies the report when it is received by EPA, it may be made public without further notice to the company (40 CFR 2.203).

APPENDIX B: ENDANGERED SPECIES ACT AND NATIONAL HISTORIC PRESERVATION ACT REVIEW DOCUMENTATION

From: Jolene Schleicher <jschleicher@swca.com>
Sent: Thursday, January 10, 2019 13:51
To: Salazar, Rudy
Subject: [EXTERNAL] FW: Targa Buffalo Compressor Station
Attachments: image001.png

Hi Rudy,
Please see the THPO's response for the Buffalo Compressor Station below. Please let us know if you need anything else for this project.

Thank you,
Jolene

Jolene Schleicher
Archaeologist/Project Manager
SWCA Environmental Consultants

-----Original Message-----

From: Pete Coffey <pcoffey@mhanation.com>
Sent: Thursday, January 10, 2019 1:41 PM
To: Jolene Schleicher <jschleicher@swca.com>
Cc: Elgin Crows Breast <redhawk@mhanation.com>
Subject: RE: Targa Buffalo Compressor Station

Jolene:

thank you for the information provided for this project. after perusal of documents and site form provided, the TAT-THP office concurs with your determination of No Historic Properties Affected. For any further questions or comments, please call me at your convenience.

Pete Coffey
Compliance Officer
TAT-THPO
404 Frontage Road,
New Town, ND, 58763
W: 701.862.2474
C: 701.421.8710

Thought creates Reality...

From: Jolene Schleicher [jschleicher@swca.com]
Sent: Friday, January 04, 2019 8:58 AM
To: Elgin Crows Breast; Pete Coffey
Cc: Sarah Sappington
Subject: Targa Buffalo Compressor Station

Good morning Mr. Crows Breast and Mr. Coffey, On December 21, 2018, we mailed the attached report and isolated find form to your office. Targa Resources is proposing to construct the Buffalo Compressor station on private lands

within the exterior boundaries of the Fort Berthold Indian Reservation. The compressor station will need to be permitted for air quality under the Federal Implementation Plan for True Minor Sources in Indian Country for the EPA. As part of that process the EPA requires that cultural resources are taken into account.

We respectfully ask if you would please review the attached documents and provide a response. If you have any questions on the attached documents, please feel free to contact me.

Thank you,

Jolene

Jolene Schleicher

Archaeologist/Project Manager

SWCA Environmental Consultants

116 N. 4th St, Suite 200

Bismarck, ND 58501

P 701.258.6622 Ext. 5413<tel:701.258.6622%20Ext.%205413> | F 701.258.5957<tel:701.258.5957>

[cid:image002.png@01D45CAE.827E09B0] <<http://www.swca.com/>> The contents of this email and any associated emails, information, and attachments are CONFIDENTIAL. Use or disclosure without sender's authorization is prohibited. If you are not an authorized recipient, please notify the sender and then immediately delete the email and any attachments.

CAUTION: [External Email] Use very high caution, especially if this message contains attachments, links, or requests for information. As a first defense, hover (with your mouse pointer) over email addresses and links to see the actual locations.



ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.®

Bismarck Office
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501
Tel 701.258.6622 Fax 701.258.5957
www.swca.com

December 21, 2018

Mr. Elgin Crows Breast
Tribal Historic Preservation Officer
Fort Berthold Indian Reservation
404 Frontage Road
New Town, North Dakota 58763

Subject: Air Quality Permitting for the Targa Buffalo Compressor Station

Dear Crows Breast:

Targa Resources (Targa) proposes to construct and permit the Buffalo Compressor Station for air quality under the Federal Implementation Plan for True Minor Sources in Indian Country for the Environmental Protection Agency (EPA). As part of the air permitting process, the EPA requires that cultural resources are taken into account.¹ The compressor station is located on fee land within the exterior boundaries of the Fort Berthold Indian Reservation in McKenzie County, North Dakota.

To that end, attached please find a cultural resource report detailing the survey results of the proposed compressor station, entitled: *A Class I and Class III Cultural Resource Inventory for the Buffalo Compressor Station, Fort Berthold Indian Reservation, Dunn County, North Dakota*, and an associated isolated find form (32DUX1524). If you have any questions or concerns regarding these documents, please do not hesitate to contact me at Sbaer@swca.com or (701) 258-6622 if you have any questions regarding the attached report.

Sincerely,

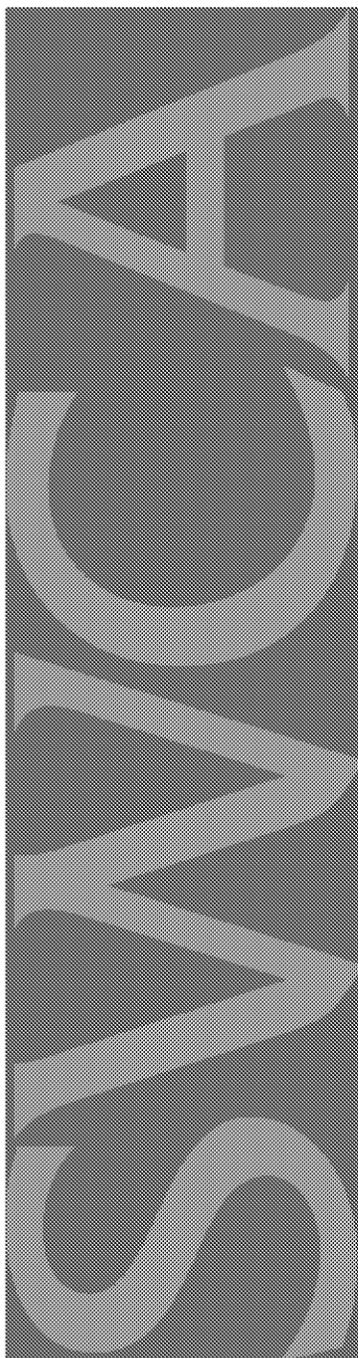
A handwritten signature in cursive script, reading "Sarah Baer".

Sarah Baer, Principal Investigator

SB:js

1

¹ U.S. Environmental Protection Agency. 2016. Procedures to Address Threatened and Endangered Species and Historic Properties for the Federal Implementation Plan for True Minor Sources in Indian Country in the Oil and Natural Gas Production and Natural Gas Processing Segments of the Oil and Natural Gas Sector. Version 1.0. Available at: <https://www.epa.gov/tribal-air>. Accessed December 19, 2018.



THREATENED AND ENDANGERED SPECIES
REVIEW IN CONNECTION WITH THE U.S.
ENVIRONMENTAL PROTECTION AGENCY
REVIEW OF THE TARGA RESOURCES, LLC,
BUFFALO COMPRESSOR STATION, DUNN
COUNTY, NORTH DAKOTA

DECEMBER 2018



PREPARED FOR

U.S. Environmental Protection Agency

PREPARED BY

SWCA Environmental Consultants

ON BEHALF OF

Targa Resources, LLC

**THREATENED AND ENDANGERED SPECIES REVIEW IN
CONNECTION WITH THE U.S. ENVIRONMENTAL
PROTECTION AGENCY REVIEW OF THE TARGA
RESOURCES, LLC, BUFFALO COMPRESSOR STATION,
DUNN COUNTY, NORTH DAKOTA**

Prepared for

U.S. Environmental Protection Agency



Prepared by

**Emily Schwartz, B.S.
Environmental Specialist**

Reviewed by

**Adrian Hogel, M.S.
Natural Resource Project Manager**

**Rio Franzman
Natural Resource Program Lead**

**SWCA Environmental Consultants
116 North 4th Street, Suite 200
Bismarck, North Dakota 58501**

December 2018

CONTENTS

1	Introduction	1
1.1	Location	1
1.2	Project Description.....	3
1.3	Applicant-Committed Best Management Practices, Protective Measures, and Mitigation Measures.....	4
1.3.1	Best Management Practices	4
1.3.2	Protective Measures	5
1.3.3	Wildlife Related Mitigation Measures	6
2	Study Area.....	7
2.1	Project Area Hydrology	7
2.2	Vegetation	7
3	Listed Species and Designated Critical Habitat in the Study Area.....	10
3.1	Gray Wolf	10
3.2	Whooping Crane	10
3.3	Interior Least Tern	14
3.4	Pallid Sturgeon.....	14
3.5	Piping Plover.....	15
3.6	Piping Plover Designated Critical Habitat	15
3.7	Dakota Skipper.....	17
3.8	Dakota Skipper Designated Critical Habitat	20
3.9	Rufa Red Knot	20
3.10	Northern Long-eared Bat	21
3.11	Black-footed Ferret	Error! Bookmark not defined.
4	Identified Stressors and Effects to Federally Listed Species	21
4.1	Gray Wolf	22
4.1.1	Direct Effects	22
4.1.2	Indirect Effects.....	22
4.1.3	Cumulative Effects.....	22
4.1.4	Effects Determination	22
4.2	Whooping Crane	23
4.2.1	Direct Effects	23
4.2.2	Indirect Effect	23
4.2.3	Cumulative Effects.....	23
4.2.4	Effects Determination	23
4.3	Interior Least Tern	23
4.3.1	Direct Effects	23
4.3.2	Indirect Effects.....	23
4.3.3	Cumulative Effects.....	24
4.3.4	Effects Determination	24
4.4	Pallid Sturgeon.....	24
4.4.1	Direct Effects	24
4.4.2	Indirect Effects.....	24
4.4.3	Cumulative Effects.....	24
4.4.4	Effects Determination	24
4.5	Piping Plover.....	25
4.5.1	Direct Effects	25
4.5.2	Indirect Effects.....	25
4.5.3	Cumulative Effects.....	25
4.5.4	Effects Determination	25

1 INTRODUCTION

Targa Resources, LLC (Targa) is proposing to construct the Buffalo compressor station, which requires coverage under the Federal Implementation Plan (FIP) for True Minor Sources in Indian Country as administered by the U.S. Environmental Protection Agency (EPA). The change in emissions resulting from the construction of the compressor station has triggered the need to apply for a permit under the FIP for True Minor Sources in Indian Country. The site will remain a “true minor source” and be permitted in accordance to the Federal Minor New Source Review Program for Indian Country.

SWCA Environmental Consultants (SWCA) has prepared a threatened and endangered species review on behalf of Targa for coverage under Criterion B in connection with the EPA Oil and Natural Gas Minor Source FIP in Indian Country. Under Section 7 of the Endangered Species Act of 1973 (16 United States Code 1531 et seq.) (ESA), federal agencies are required to consult with the U.S. Fish and Wildlife Service (USFWS) in the undertaking, funding, permitting, or authorizing of actions when there may be an effect from the action on any federally listed threatened or endangered species or their designated critical habitat (USFWS 1998). The granting of any permits under the EPA’s authorities is a federal action requiring consultation for those actions which may affect threatened or endangered species and their critical habitats. This report presents the analyses and determinations of the effects, if any, of the proposed compressor station on such species.

1.1 Location

The proposed Buffalo compressor station is located on Three Affiliated Tribes (TAT) fee surface lands within the Fort Berthold Indian Reservation (Reservation), approximately 5.13 straight-line miles southwest of Mandaree, North Dakota, in the southwest quarter of Section 1, Township 148 North, Range 95 West, Dunn County, North Dakota (Figure 1).

CONTENTS (continued)

4.6	Piping Plover Designated Critical Habitat	25
4.6.1	Direct Effects	25
4.6.2	Indirect Effects.....	25
4.6.3	Cumulative Effects.....	25
4.6.4	Effects Determination	25
4.7	Dakota Skipper.....	26
4.7.1	Direct Effects	26
4.7.2	Indirect Effects.....	26
4.7.3	Cumulative Effects.....	26
4.7.4	Effects Determination	26
4.8	Dakota Skipper Designated Critical Habitat.....	26
4.8.1	Direct Effects	26
4.8.2	Indirect Effects.....	26
4.8.3	Cumulative Effects.....	26
4.8.4	Effects Determination	26
4.9	Rufa Red Knot	27
4.9.1	Direct Effects	27
4.9.2	Indirect Effect	27
4.9.3	Cumulative Effects.....	27
4.9.4	Effects Determination	27
4.10	Northern Long-eared Bat	27
4.10.1	Direct Effects	27
4.10.2	Indirect Effects.....	27
4.10.3	Cumulative Effects.....	28
4.10.4	Effects Determination	28
4.11	Black-footed Ferret	28
4.11.1	Direct Effects	28
4.11.2	Indirect Effects.....	28
4.11.3	Cumulative Effects.....	28
4.11.4	Effects Determination	28
5	Literature Cited	29

Appendices

Appendix A. Site Photographs

Figures

Figure 1.	Buffalo compressor station location.	2
Figure 2.	NWI wetlands and streams within the study area.....	8
Figure 3.	Natural resource data points recorded during SWCA's surveys.	9
Figure 4.	Whooping crane habitat suitability analysis within the study area.....	12
Figure 5.	Whooping crane migration corridors.....	13
Figure 6.	Piping plover and Dakota skipper critical habitat.....	16
Figure 7.	Dakota skipper habitat suitability model.	19

Tables

Table 1. Dakota Skipper Habitat Suitability	18
---	----

This page intentionally left blank.

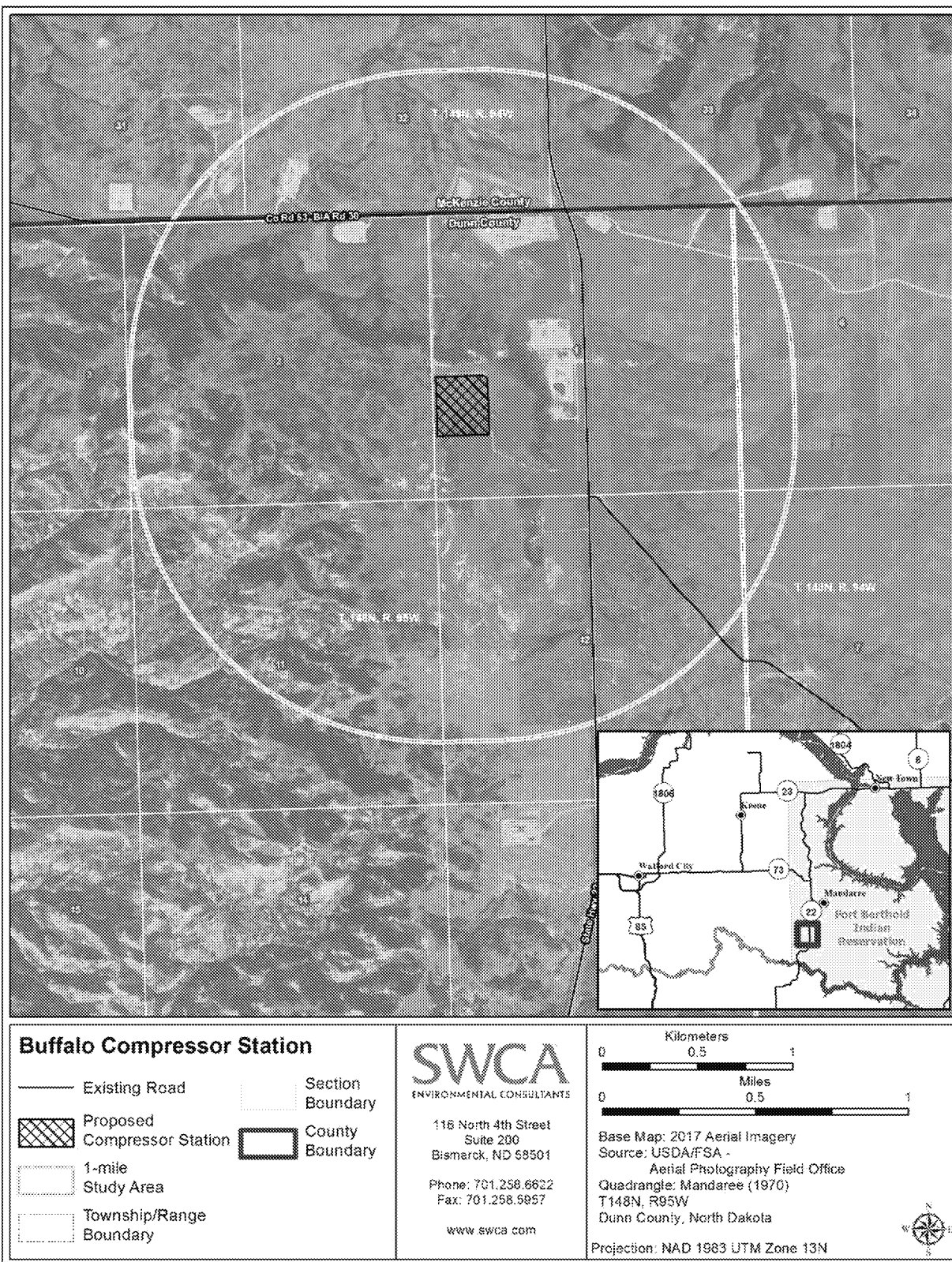


Figure 1. Buffalo compressor station location.

1.2 Project Description

Targa is proposing to construct the Buffalo compressor station, which is a facility that helps the transportation process of natural gas from one location to another. Natural gas, while being transported through a gas pipeline, needs to be constantly pressurized at certain distance intervals. The compressor station compresses the natural gas to move it through the pipeline. The gas in compressor stations is pressurized by special turbines, motors, and engines, and the stations are typically installed every 40 to 70 miles along a pipeline route. The station would support the existing South Loop pipeline system.

The proposed compressor station construction area is approximately 20 acres. Construction would result in long-term surface disturbance, including cut-and-fill slopes, as well as stockpiling of topsoil on the edge of the foundation for the structure surrounding the compressor station. Construction of the compressor station would take approximately 2 to 3 weeks and would be completed using standard heavy equipment, such as earth-moving equipment and bulldozers. The foundation would be leveled by balancing cut-and-fill areas. Vegetation would be cleared from the site, and topsoil would be stripped and stockpiled on-site for future reclamation. Excavated subsoil stored on-site would be used in the construction of the foundation, which would be graded to drain water away from the project site. Best management practices (BMPs) would be implemented to minimize wind and water erosion of the topsoil (see Section 1.3 below). Berms would be constructed around the site to prevent runoff.

Interim reclamation would consist of reclaiming all areas not part of the working area of the compressor station. Immediately after construction is completed, all equipment and materials not necessary for operations would be removed from the project location and surrounding area. The compressor station area of disturbance not needed for the compressor station facility would be recontoured, covered with 6 inches of topsoil, and seeded using methods and native seed mixtures determined by the TAT. Erosion- and sediment-control measures would be repaired or reinstalled, as needed.

The working area of the compressor station would be surfaced with scoria or crushed rock obtained from a previously approved location. Targa would use federal- and/or state-approved chemical or mechanical methods to control noxious weeds within the project area.

All topsoil material stockpiled after construction and following interim reclamation would be immediately placed in windrows no taller than 2 to 4 feet, seeded with a certified weed-free native seed mixture as recommended by the TAT at a rate of 10 pounds per acre, and covered with fiber matting to prevent erosion and maintain soil fertility. At least two growing seasons are typically required for vegetation to sufficiently repopulate reclaimed areas. If vegetation reclamation were to prove unsuccessful, additional measures could be required and developed by Targa and the TAT. Final reclamation would occur upon final abandonment of commercial operations for the pipeline system. During this process, all facilities would be removed and reused to the extent feasible for future development projects.

Various levels of vehicle traffic would be generated during the construction phase and operation phase. Construction trips would require large trucks to haul equipment (e.g., bulldozers, scrapers, graders, etc.) and supplies to and from the site, hauling trucks to deliver other construction materials, and vans and other crew vehicles. Operation of the compressor station would be conducted remotely. However, it is anticipated that maintenance vehicles would regularly travel to and from the compressor station.

1.3 Applicant-Committed Best Management Practices, Protective Measures, and Mitigation Measures

The following BMPs, protective measures, and mitigation measures are designed to minimize the direct and indirect effects of human activities on the landscape. Some are written to address specific resources, resource uses, or human aesthetics. However, they all reduce direct and indirect alterations to the existing environment and, as such, also reduce impacts to habitat and, subsequently, wildlife, including threatened and endangered species. Targa would implement these BMPs to the extent that they would be technically feasible to minimize project impacts.

1.3.1 Best Management Practices

- Plan and locate roads and facility sites to minimize visual impacts.
- Use existing roads to the extent possible, upgrading them as needed.
- Reduce the size of facility sites and types of roads to minimize surface disturbance.
- Minimize topsoil removal.
- Stockpile stripped topsoil and protect it from erosion until reclamation activities begin. At that time, redistribute the soil and seed the disturbed areas. Protect and maintain these reclaimed areas until they are fully stabilized.
- Avoid removal of or damage to trees, shrubs, and groundcover where possible. Clearly mark trees near construction areas to prevent their removal.
- Mow vegetation, instead of clearing vegetation and disturbing the soil surface of a facility or well site, to accommodate vehicles or equipment.
- Maintain buffer strips or use other sediment-control measures to avoid sediment migration to stream channels as a result of construction activities.
- Ensure proper storage of chemicals (including secondary containment).
- Keep sites clean. For example, contain trash in a portable trash cage that would be emptied at a state-approved sanitary landfill.
- Conduct snow removal activities in a manner that would not adversely affect reclaimed areas and areas adjacent to reclaimed areas.
- Avoid or minimize topographic alterations, activities on steep slopes, and disturbances in stream channels and floodplains to the extent possible.
- Maintain adequate buffers around work areas where construction activities could pose a risk for fire.
- Limit idling of vehicles.
- Use clean-burning diesel engines.
- Keep fire extinguishers in all vehicles.
- Plan transportation to reduce vehicle density.
- Post speed limits on roads.
- Avoid travel during wet conditions, which could result in excessive rutting (ruts 4 inches or deeper).

- Paint facilities with flat colors that would blend with the environment.
- Practice dust abatement on roads and during compressor station construction.
- Recontour disturbed areas to approximate the original contours of the landscape during final reclamation.
- Develop a final reclamation plan that would allow disturbed areas to quickly return to the natural landscape.
- Reclaim any disturbed areas resulting from operational maintenance actions along gathering pipelines.

1.3.2 Protective Measures

- During construction, a watering truck will be kept on-site, and the existing access road will be watered, especially during periods of high winds or low precipitation.
- Gathering pipeline design and safety measures will be implemented to maintain the integrity of the gathering pipelines and prevent pipeline failures or erosion. Check and manual shutoff valves will be installed at the connection between the trunk and gathering lines. Additionally, Targa's spill prevention plan (Targa 2013) will be strictly adhered to, and a spill prevention, control, and countermeasure plan will be implemented.
- Topsoil will be placed to divert flow away from the compressor station to limit the possibility of surface contamination.
- All disturbed areas not needed for operations after completion of construction will be revegetated.
- Matting and/or hydroseeding will be used on the exposed slopes of the construction site, as specified by the TAT.
- If trees and other woody material are removed from the proposed compressor station area, they will be ground and added to the topsoil.
- All topsoil material stockpiled after construction and following interim reclamation will be immediately placed in windrows no higher than 2 to 4 feet, seeded with a certified weed-free native seed mixture at a rate of 10 pounds per acre, and covered with fiber matting to prevent erosion and maintain soil fertility.
- The project location will be inspected during construction in accordance with National Pollutant Discharge Elimination System requirements, and the location will be monitored after construction to prevent erosion.
- Excess soil after interim reclamation will be removed from the project area and disposed of in accordance with appropriate permits.
- Cut-and-fill slopes will be seeded with a certified weed-free native seed mixture at a rate of 10 pounds per acre and covered with fiber matting to prevent erosion and maintain soil fertility.
- Construction equipment, materials, and vehicles will be allowed at construction sites or at specified construction yards only. This will help prevent vehicles from tracking invasive seeds and vegetation onto undisturbed areas. It will also help prevent wildlife from getting into or under equipment.
- All personal vehicles, sanitary facilities, and staging areas will be confined to a limited number of specified locations to decrease chances of incidental disturbance and spread of weeds.

- In areas with existing noxious weed infestations, vegetation, soils, and trench spoil material will be stockpiled adjacent to their removal point and, following construction, will be returned to their original location to prevent spreading.
- Prompt re-establishment of the desired vegetation in disturbed areas will be required. Seeding will occur during the frost-free periods following construction. Certified weed-free native grass seed will be used on all areas to be seeded.
- Structures and ancillary facilities will be sited a minimum of 150 feet from wetlands and perennial and intermittent streams and will also have a 24-inch-tall perimeter berm.
- Targa will schedule construction for late summer or fall/early winter to avoid disrupting waterfowl or other migratory birds during the breeding season (February 1–July 15).
- If the construction time frame in the item above cannot be met, Targa will degrade migratory bird habitat in the project area outside of the breeding season by mowing or clearing and grubbing to discourage nesting and will maintain the habitat in a degraded state until construction is completed.
- If construction occurs within the migratory bird nesting season (February 1–July 15) without habitat degradation, Targa will conduct surveys at the compressor station location for migratory birds and their active nests (nests containing eggs or young) within 5 days of commencement of construction activities. If active migratory bird nests are found during surveys, the USFWS will be presented with a proposal for realigning the work or maintaining adequate buffers to prevent the take of migratory birds.
- Targa will maintain a minimum 0.5-mile buffer around all known or newly discovered active bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) nests.
- If utility lines are needed at the project location, they will be buried.
- The compressor station will be constructed in or near areas with existing disturbances.
- Covers will be installed under drip buckets and spigots.
- Interim reclamation will be conducted on at least one-half of the disturbed area to minimize the overall amount of disturbance at a given time.
- Suitable mufflers will be installed on all internal combustion engines and certain compressor components to minimize noise levels.
- The compressor station will be monitored 24 hours per day, 7 days per week remotely via supervisory control and data acquisition systems to reduce noise and traffic and to increase safety.

1.3.3 Wildlife Related Mitigation Measures

- If a whooping crane (*Grus americana*) is sighted within 1 mile of the proposed compressor station, work will stop, and the USFWS would be notified. In coordination with the USFWS, Targa could resume work after the bird(s) leaves the area (Bureau of Indian Affairs [BIA] 2014).

2 STUDY AREA

The study area considered in this report includes areas within and adjacent to the immediate compressor station project area that may be affected directly or indirectly by the action. SWCA also defined the study area to include a 1-mile buffer around the immediate project area (see Figure 1). This study area was identified because 1 mile allows typical construction noise and disturbance to attenuate to a level that is not obtrusive to wildlife species. Accordingly, for the purposes of analysis, it was assumed that wildlife habitat within this buffer would be disturbed by project construction and operation.

2.1 Project Area Hydrology

The proposed compressor station location is within the Moccasin Creek (hydrologic unit code [HUC] 101102050604) subwatershed, the Waterchief Bay (HUC 1011020506) watershed, and the Little Missouri (HUC 10110205) drainage basin. Runoff from the proposed compressor station would flow, at its closest, approximately 30.41 river-miles, until reaching perennial waters in Lake Sakakawea.

No intermittent or perennial waterbodies or wetlands were recorded within the project area during SWCA's wetland/waterbody surveys, conducted on November 13, 2018. Twenty-four National Wetlands Inventory (NWI) wetlands are located within the 1-mile study area (Figure 2). Additionally, 10 U.S. Geological Survey National Hydrography Dataset (NHD) flowlines are located within the 1-mile study area (Figure 2).

2.2 Vegetation

The major habitat type identified within the survey area during the field surveys was mixed-grass prairie with a prevalence of non-native species. This survey was conducted on November 13, 2018. Upland data points and woody vegetation areas were recorded throughout the project area (Figure 3). Dominant species identified during the field surveys included smooth brome (*Bromus inermis*) and Kentucky bluegrass (*Poa pratensis*). Other vegetation that was present included blue grama (*Bouteloua gracilis*), curlycup gumweed (*Grindelia squarrosa*), wild bergamont (*Monarda fistulosa*), stiff goldenrod (*Solidago rigida*), big bluestem (*Andropogon gerardii*), silver buffaloberry (*Shepherdia argentea*), green ash (*Fraxinus pennsylvanica*), and western snowberry (*Symphoricarpos occidentalis*).

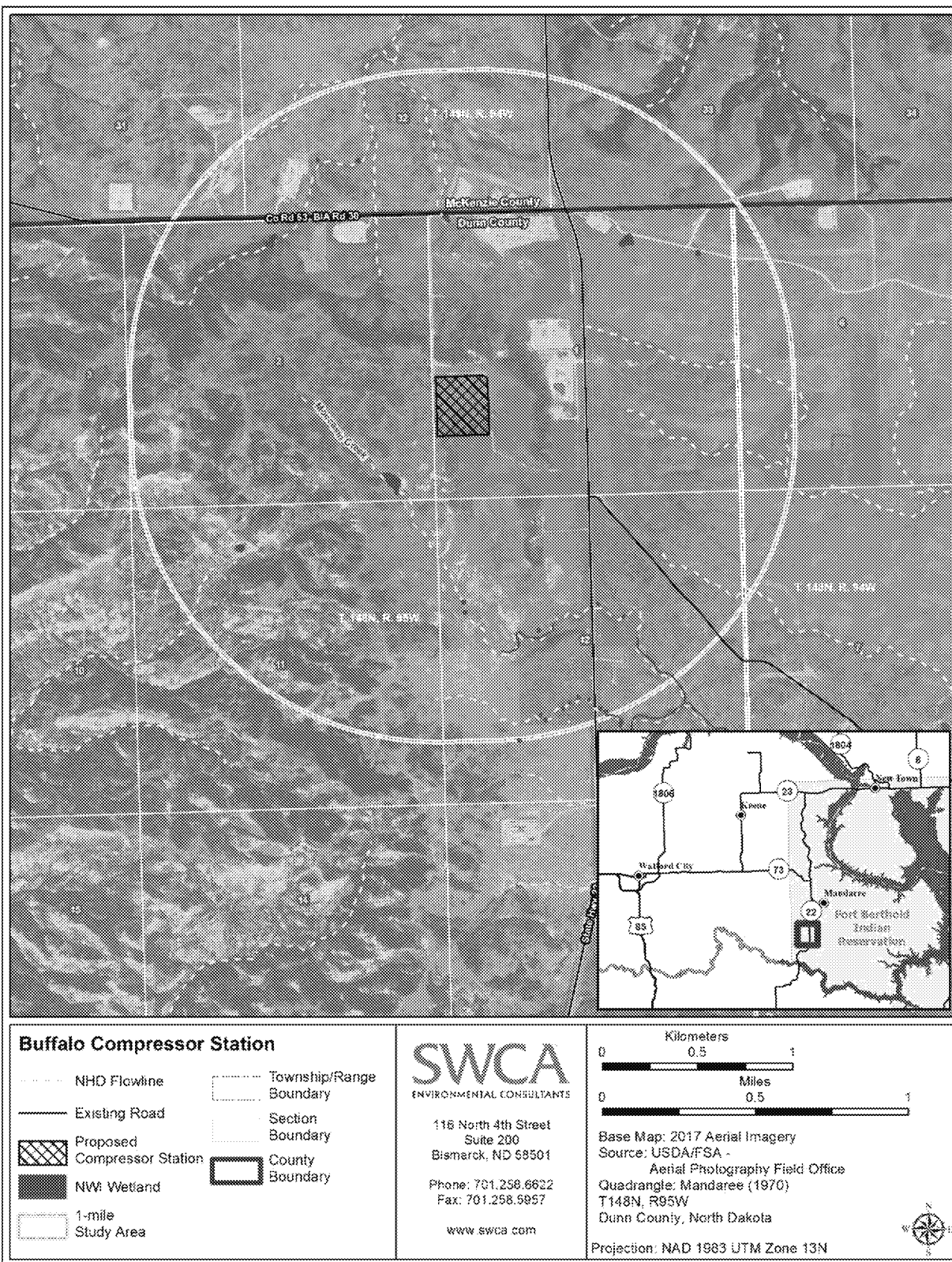


Figure 2. NWI wetlands and NHD flowlines within the study area.

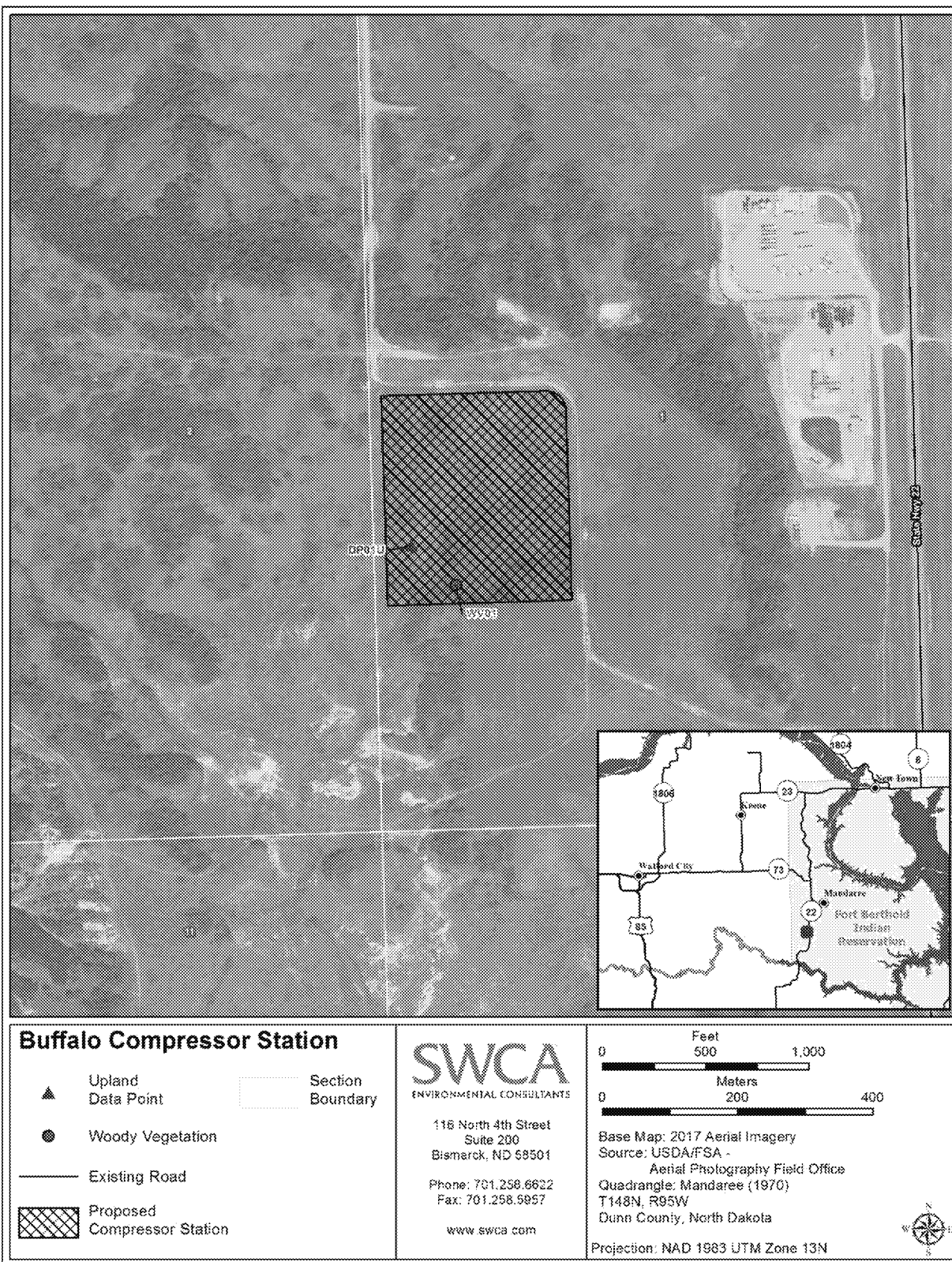


Figure 3. Natural resource data points recorded during SWCA's surveys.

3 LISTED SPECIES AND DESIGNATED CRITICAL HABITAT IN THE STUDY AREA

While the project area is completely within Dunn County, a portion of the study area is within McKenzie County; therefore, listed species in both counties are considered for this review. Several wildlife species that may exist in Dunn and McKenzie Counties are listed as threatened or endangered under the ESA. According to the USFWS, listed species in Dunn County include the gray wolf (*Canis lupus*), whooping crane, interior least tern (*Sternula antillarum athalassos*), pallid sturgeon (*Scaphirhynchus albus*), piping plover (*Charadrius melodus*) and its designated critical habitat, Dakota skipper (*Hesperia dacotae*) and its designated critical habitat, rufa red knot (*Calidris canutus rufa*), and northern long-eared bat (*Myotis septentrionalis*). An additional species listed as endangered in McKenzie County is the black-footed ferret (*Mustela nigripes*). A brief life history and biological review of each species within the study area is provided in the following sections.

SWCA conducted a qualitative threatened and endangered species survey and habitat assessment within the study area during the field surveys on November 13, 2018. Species-specific surveys were not conducted; however, species presence/absence was noted. Photographs of the surveyed areas are provided in Appendix A.

3.1 Gray Wolf

Federal Status: Endangered

The gray wolf, listed as endangered in the United States in 1978, was believed extirpated from North Dakota in the 1920s and 1930s, with only sporadic reports from the 1930s to present (Licht and Huffman 1996; USFWS 1978). The presence of wolves in most of North Dakota consists of occasional dispersing animals from Minnesota and Manitoba (Licht and Fritts 1994; Licht and Huffman 1996). Most documented gray wolf sightings within North Dakota are believed to be young males seeking to establish territory (Hagen et al. 2005). The Turtle Mountain region of north-central North Dakota provides marginal habitat that may be able to support a very small population of wolves. The closest known population of wolves is the Minnesota population, located approximately 17 miles (28 kilometers [km]) from the northeast corner of North Dakota. The northeast corner of North Dakota is approximately 268 straight-line miles from the project area. The gray wolf uses a variety of habitats that support a large prey base, including montane and low-elevation forests, grasslands, and desertscrub (USFWS 2017a). Due to a lack of forested habitat and distance from Minnesota and Manitoba populations, the re-establishment of gray wolf populations in North Dakota is unlikely. Additionally, habitat fragmentation may further act as a barrier against wolf recolonization in North Dakota.

The study area does not support suitable habitat for the gray wolf. There are no documented occurrences of this species in the study area, and no wolves were observed during SWCA's surveys.

3.2 Whooping Crane

Federal Status: Endangered

The whooping crane was listed as endangered in 1970 in the United States by the USFWS and in 1978 in Canada. Historically, population declines were caused by shooting of individuals and destruction of nesting habitat in the prairies from agricultural development. Current threats to the species include habitat destruction, especially suitable wetland habitats that support breeding and nesting as well as feeding and roosting during their fall and spring migration. Typical spring migration occurs between mid-March and

early May. Fall migration occurs between mid-September and mid-November (Canadian Wildlife Service and USFWS 2007; USFWS 2013a).

The winter 2015–2016 total wild population of the Wood Buffalo-Aransas population was estimated at 329 birds (USFWS 2016a). Only one self-sustaining wild population, the Aransas-Wood Buffalo National Park population, exists and nests in Wood Buffalo National Park and adjacent areas in Canada, where approximately 83% of the wild nesting sites occur (Canadian Wildlife Service and USFWS 2007; USFWS 2013a).

Whooping cranes probe the soil subsurface with their bills for food on the soil or vegetation substrate (Canadian Wildlife Service and USFWS 2007; USFWS 2013a). Whooping cranes are omnivores, and foods typically include agricultural grains, as well as insects, frogs, rodents, small birds, minnows, berries, and plant tubers. The majority of time spent during migration is spent feeding in harvested grain fields (Canadian Wildlife Service and USFWS 2007; USFWS 2013a). Studies indicate that whooping cranes use a variety of habitats during migration, in addition to cultivated croplands, and generally roost in small palustrine (marshy) wetlands within 0.6 mile (1 km) of suitable feeding areas (Howe 1987, 1989). Whooping cranes have been recorded in riverine habitats during their migration, with eight sightings along the Missouri River in North Dakota (Canadian Wildlife Service and USFWS 2007; USFWS 2013a). In riverine habitats, cranes roost on submerged sandbars in wide, unobstructed channels that are isolated from human disturbance (Armbruster 1990).

Based on the scientific literature, roosting wetlands are typically greater than or equal to 0.09 acre (Austin and Richert 2001, 2005); occur within 1.0 km (0.62 mile) of agricultural crops (Austin and Richert 2005; Howe 1987, 1989; Johns et al. 1997); are greater than 700 meters (m) from road disturbance (Armbruster 1990; Armbruster and Farmer 1981; Johns et al. 1997; Ward and Anderson 1987); and are greater than 1,000 m from building/structure disturbance (Armbruster 1990; Armbruster and Farmer 1981; Johns et al. 1997).

The analysis area is based on known distance tolerances of whooping cranes to disturbance. Twenty-four NWI wetlands were identified within the 1-mile buffer of the study area. Two of these wetlands meet the habitat suitability parameters of more than 0.09 acre, more than 700 m from existing roads, and more than 1,000 m from existing infrastructure and are considered possible suitable roosting habitat (Figure 4). No whooping cranes were observed during SWCA's surveys, and no wetlands or suitable foraging habitat for whooping crane were recorded within the action area during surveys; however, surveys were conducted outside of the migration period.

The proposed compressor station and surrounding 1-mile study area are within the whooping crane 75% migration corridor (Figure 5). Whooping crane observations have been documented along the shores of the Missouri River and Lake Sakakawea, but no known occurrences are within 10 miles of the proposed compressor station.

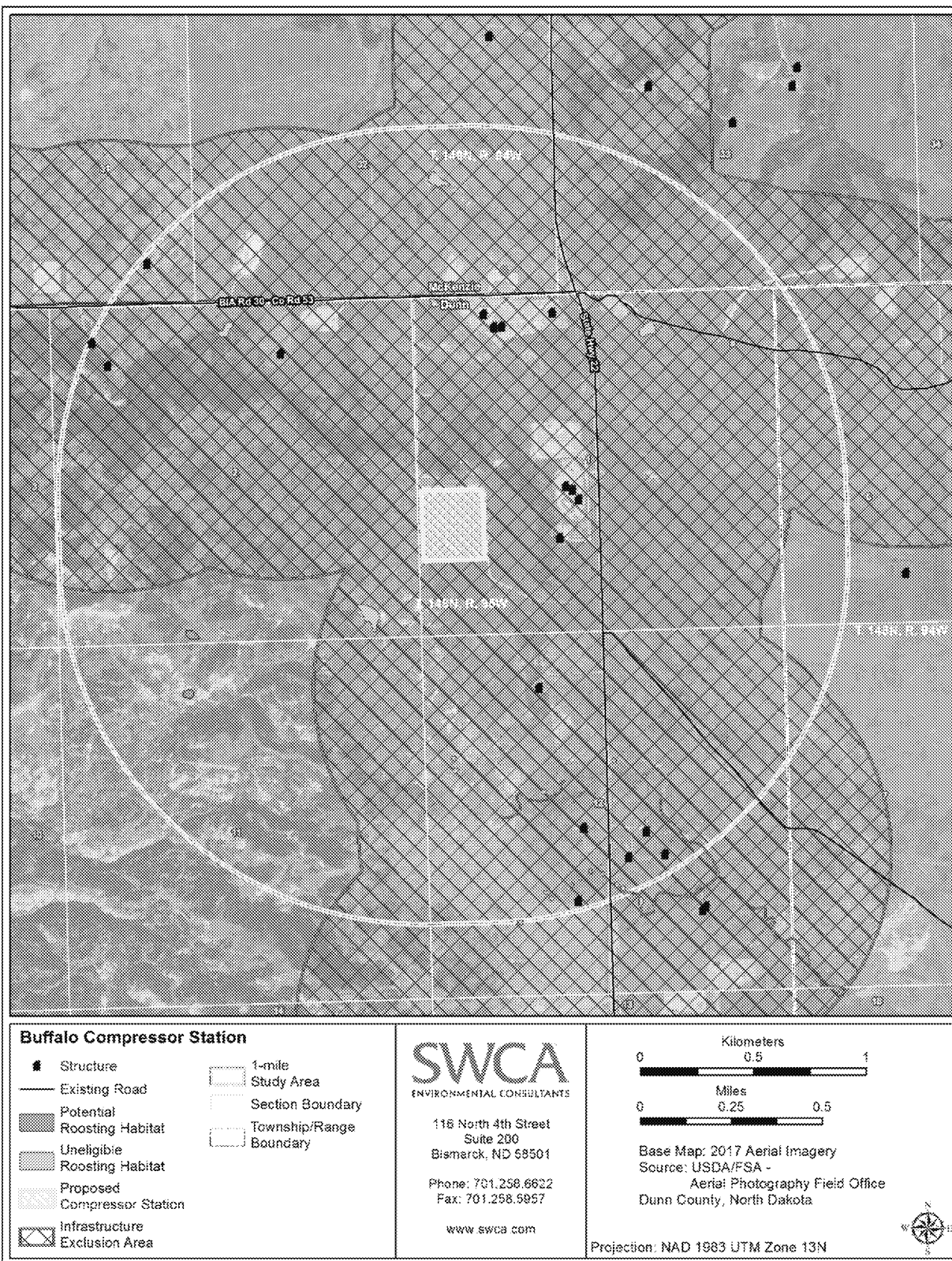


Figure 4. Whooping crane habitat suitability analysis within the study area.

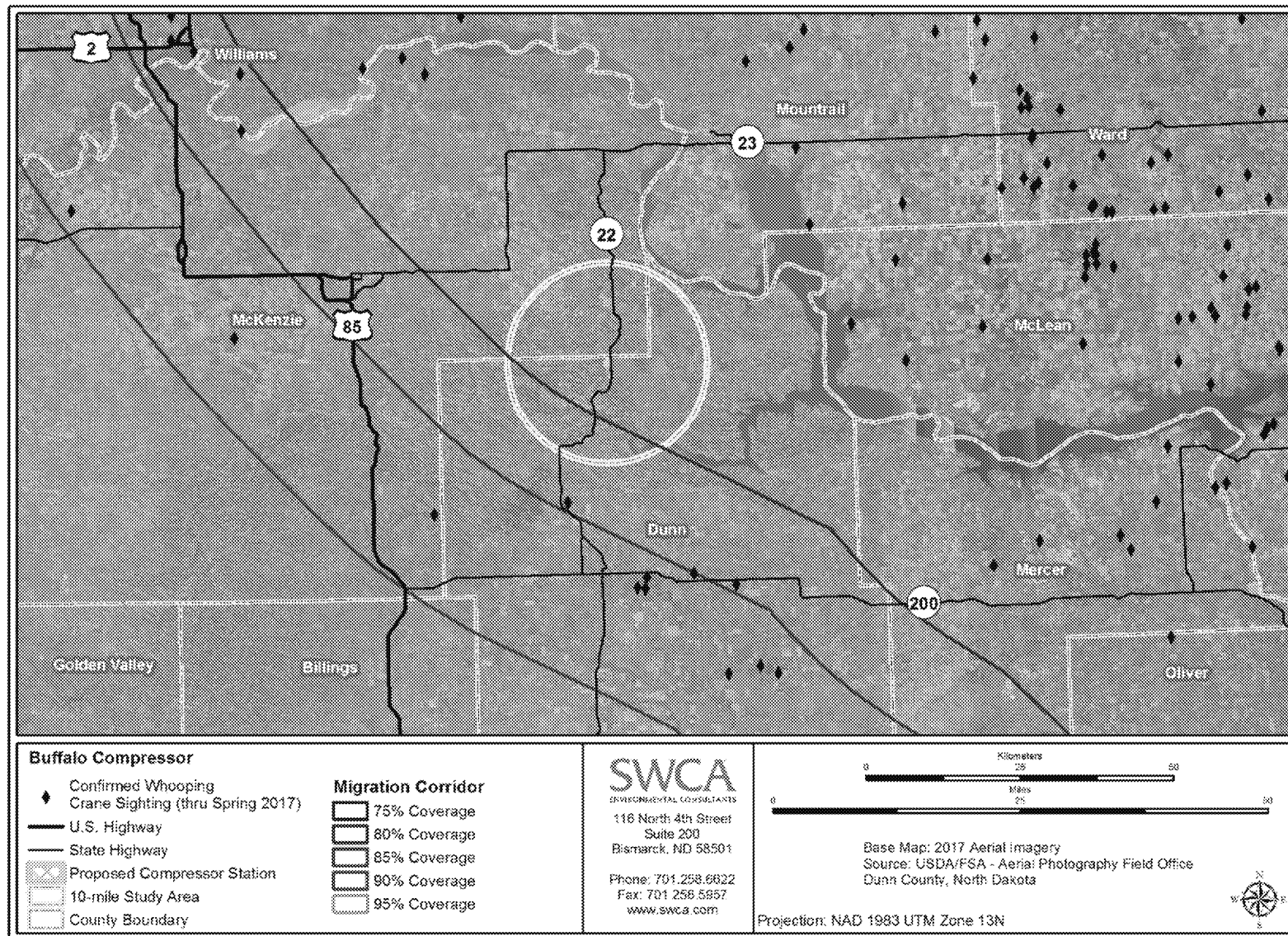


Figure 5. Whooping crane migration corridors.

3.3 Interior Least Tern

Federal Status: Endangered

The interior population of the least tern is listed as endangered by the USFWS (1985a). This bird is the smallest member of the gull and tern family, measuring approximately 9 inches long. Terns remain near flowing water, where they feed by hovering over and diving into standing or flowing water to catch small fish (USFWS 2016b).

The interior population of least terns arrives at breeding sites from late April to early June, where they breed in isolated areas along the Missouri, Mississippi, Ohio, Red, and Rio Grande river systems. Nesting occurs in small colonies from late April to August. Terns nest in a shallow hole scraped in an open sandy area, gravel patch, or exposed flat and bare sandbars along rivers, sand and gravel pits, or lake and reservoir shorelines. The adults continue to care for chicks after they hatch. Least terns in North Dakota often will be found sharing sandbars with the piping plover, a threatened species (USFWS 2016b).

Census data indicate that more than 8,000 least terns comprise the interior population. In North Dakota, the least tern is found mainly on the Missouri River from Garrison Dam south to Lake Oahe and on the Missouri and Yellowstone Rivers upstream of Lake Sakakawea (USFWS 1990a, 2016b). Approximately 100 pairs breed in North Dakota (USFWS 2016b). Details of their migration are unknown, but their winter range is reported to include the Gulf of Mexico and Caribbean islands (USFWS 1990a, 2016b).

Loss of suitable breeding and nesting habitat for terns has resulted from dam construction and river channelization on major rivers throughout the Mississippi, Missouri, and Rio Grande river systems. River and reservoir changes have led to reduced sandbar formation and other shoreline habitats for breeding, resulting in population declines. In addition, other human shoreline disturbances affect the species (USFWS 1990a). Critical habitat has not been designated for the species (USFWS 2016b). Current conservation strategies include identification and avoidance of known nesting areas, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 2016b).

Suitable shoreline habitats for breeding and nesting terns were not observed within the study area during SWCA's surveys, and Lake Sakakawea is approximately 30.41 river-miles southeast from the project area. Migrating and foraging least terns could visit wetlands near the project area; however, due to lack of suitable nesting habitat, nesting would not be expected in the study area. The study area does not support suitable habitat for the interior least tern. There are no documented occurrences of this species in the study area.

3.4 Pallid Sturgeon

Federal Status: Endangered

The pallid sturgeon was listed as endangered in 1990 in the United States by the USFWS (1990b). The primary factor leading to the decline of this species is the alteration of habitat through river channelization, creation of impoundments, and alteration of flow regimes (USFWS 1990b). These alterations within the Missouri River have blocked movements to spawning, feeding, and rearing areas; destroyed spawning habitat; altered flow conditions, which can delay spawning cues; and reduced food sources by lowering productivity (USFWS 2007). The fundamental elements of pallid sturgeon habitat are defined as the bottom of swift waters of large, turbid, free-flowing rivers with braided channels; dynamic flow patterns; flooding of terrestrial habitats; and extensive microhabitat diversity (USFWS 1990b).

Pallid sturgeon populations occur in the Missouri River below Fort Peck Dam to the headwaters of Lake Sakakawea and the lower Yellowstone River up the confluence of the Tongue River, Montana (USFWS

2007). This population consists of approximately 136 wild adult pallid sturgeon (USFWS 2007). Hatchery-reared sturgeon have also been stocked since 1998. The pallid sturgeon has been found to use the 15.5 miles (25 km) of riverine habitat that would be inundated by Lake Sakakawea at full pool (Bramblett 1996). Larval pallid sturgeon have also been found to drift into Lake Sakakawea. Although the majority of pallid sturgeon in the lake are found in the headwaters of Lake Sakakawea, the North Dakota Game and Fish Department has caught and released pallid sturgeon in nets set in 80 to 90 feet of water between the New Town and Van Hook areas.

Suitable habitat for pallid sturgeon was not observed within the study area during SWCA's surveys, and Lake Sakakawea is approximately 30.41 river-miles southeast from the proposed compressor station. There are no documented occurrences of this species in the study area.

3.5 Piping Plover

Federal Status: Threatened

The piping plover is a small shorebird that breeds only in three geographic regions of North America: the Atlantic Coast, the Northern Great Plains, and the Great Lakes. Piping plover populations were federally listed as threatened and endangered in 1985, with the Northern Great Plains and Atlantic Coast populations listed as threatened and the Great Lakes population listed as endangered (USFWS 1985b).

Plovers in the Great Plains make their nests on open, sparsely vegetated sand or gravel beaches adjacent to alkali wetlands, and on beaches, sand bars, and dredged material islands of major river systems (USFWS 2002, 2016c). The shorelines of lakes of the Missouri River constitute significant nesting areas for the bird. Piping plovers nest on the ground, making shallow scrapes in the sand, which they line with small pebbles or rocks (USFWS 1988a). Anthropogenic alterations of the landscape along rivers and lakes where piping plover nest have increased the number and type of predators, subsequently decreasing nest success and chick survival (USFWS 2002, 2016c). The piping plover breeding season is generally from April 15 through August 31. Plovers fly south by mid- to late August to areas along the Gulf of Mexico in Texas and Mexico (USFWS 2002). The Northern Great Plains population has continued to decline despite federal listing, with population estimates of 1,213 breeding pairs in 2006 reduced to fewer than 418 in 2011 (USFWS 2011; U.S. Geological Survey 2006). Low survival of adult birds has been identified as a factor (Root et al. 1992). Current conservation strategies include identification and preservation of known nesting sites, public education, and limiting or preventing shoreline disturbances near nests and hatched chicks (USFWS 1988a, 2016c).

Suitable shoreline habitats for breeding and nesting plovers were not observed within the study area during SWCA's surveys, and Lake Sakakawea is approximately 30.41 river-miles southeast of the project area. It is possible that migrating and foraging plovers could visit the wetlands near the project area; however, due to lack of alkaline wetlands, nesting would be unlikely. There are no documented occurrences of this species in the study area.

3.6 Piping Plover Designated Critical Habitat

The USFWS has designated critical habitat for the Great Lakes and Northern Great Plains populations of piping plover (USFWS 2002). Designated critical habitat for the piping plover includes 183,422 acres and 1,207.5 river-miles of habitat, including unvegetated sand and gravel substrates on islands and the shoreline of Lake Sakakawea in McKenzie County, North Dakota (USFWS 2002), which is approximately 30.41 river-miles from the study area (Figure 6).

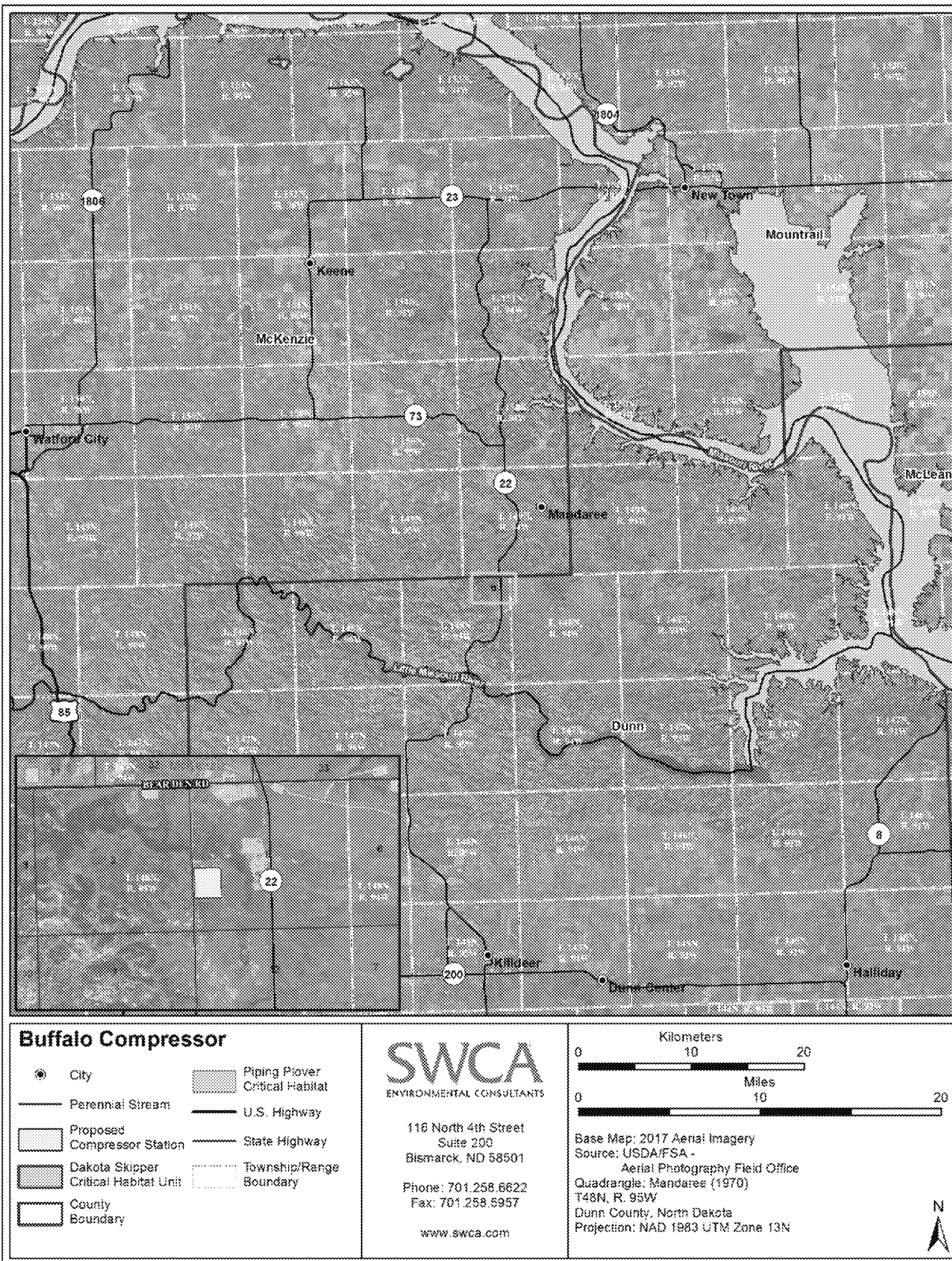


Figure 6. Piping plover and Dakota skipper critical habitat.

The primary constituent elements for the designation of piping plover critical habitat were developed by considering the physical and biological requirements for the survival of the species. The primary biological constituents necessary for survival are the ecological processes that create the required variation of habitats on the landscape. Processes such as weather patterns, hydrological cycles, and land use patterns all may influence the suitability of habitat patches.

These local ecological processes create the essential habitat types or the primary physical requirements, which provide forage, nesting, brooding, and chick-rearing areas. On reservoirs such as Lake Sakakawea, sandy or gravel substrate shoreline beaches, islands, and peninsulas, which are sparsely vegetated and interact with the water's edge, are the physical primary constituents.

The study area does not contain designated critical habitat for piping plover (see Figure 6).

3.7 Dakota Skipper

Federal Status: Threatened

The Dakota skipper is a small butterfly with a 1-inch wingspan. The male wing ranges from a tawny orange to brown, and the female wing is darker brown with tawny orange spots and faint white spots (USFWS 2014). The Dakota skipper was found to be warranted for protection under the ESA, was precluded for higher-priority species in 1995, and was the subject of a proposed rule for listing as threatened under the ESA. On October 24, 2014, the USFWS determined a threatened species status for the Dakota skipper, and the final rule became effective November 24, 2014 (79 *Federal Register* 63672). The primary causes for decline in Dakota skipper populations include the loss or fragmentation of high-quality native prairie habitat due to overgrazing, conversion to agriculture, invasion by non-native plants, urbanization, and disruption of natural prairie fire cycles.

Dakota skipper dispersal is limited due to a short adult life span of 3 weeks (Dana 1991) and one annual flight per year. The Dakota skipper may disperse an average 0.6 mile (1 km) to an area that contains sufficient vegetative diversity and emigrants. Unless a site is within about 0.6 mile of an area that generates a sufficient number of emigrants, the species' extirpation from the site is likely permanent.

Two habitat types have been described for Dakota skipper in North Dakota. 'Type A' habitat is low, wet-mesic prairie with little topographic relief occurring in near-shore glacial lake deposits (Royer and Marrone 1992). Three plant species dominate Type A habitat and include wood lily (*Lilium philadelphicum*), bluebell bellflower (*Campanula rotundifolia*), and mountain deathcamas (*Zigadenus elegans*) (McCabe 1981). 'Type B' habitat of the Dakota skipper occurs on rolling terrain over gravelly glacial moraine deposits and is dominated by big bluestem, little bluestem (*Schizachyrium scoparium*), and needlegrasses (*Stipa* spp.), and may include bluebell bellflower and wood lily (USFWS 2015a). Additionally, Type B habitat supports extensive stands of purple coneflower (*Echinacea angustifolia*), upright prairie coneflower (*Ratibida columnifera*), and common gaillardia (*Gaillardia aristata*) (USFWS 2015a).

A revised programmatic biological assessment/biological evaluation addendum for the Reservation was prepared by the BIA for the Dakota skipper, Poweshiek skipperling (*Oarisma poweshiek*), northern long-eared bat, and rufa red knot (BIA 2015). Using the best available scientific and publicly available data, a series of coarse- to fine-scaled filters (or data layers) was used within a geographic information system (GIS) database to identify and map potential Dakota skipper habitat quality within the Reservation for the biological assessment/biological evaluation. Called the Dakota skipper habitat suitability model, this modeling approach produced a map that classified the entire Reservation landscape into polygons that indicate potential locations for possible habitat and possible high-quality habitat, along with areas where habitat is not present or not likely to be present.

SWCA personnel completed a desktop analysis of potential Dakota skipper habitat based on the habitat suitability model described above. The study area analyzed for Dakota skipper is defined as a 0.62-mile (1-km) radius around the proposed compressor station and was derived from the estimated maximum dispersal distance of adult Dakota skippers. The results of this analysis are provided below in Table 1 and illustrated in Figure 7.

Table 1. Dakota Skipper Habitat Suitability

Habitat Type	Acres in Study Area
Habitat not likely	337.91
Habitat not present	349.88
Habitat possible	389.68

SWCA's field surveys revealed that the modeled "possible habitat" in the study area is highly fragmented by development. The proposed compressor station location is adjacent to existing disturbance. The study area does contain areas of mixed-grass prairie, but these areas are dominated by invasive species (see Section 2.2). Soils in the area are characterized as silty clay loams, which generally are not suitable for larvae habitat. There are no documented occurrences of this species in the study area, and no Dakota skippers were observed during SWCA's surveys.

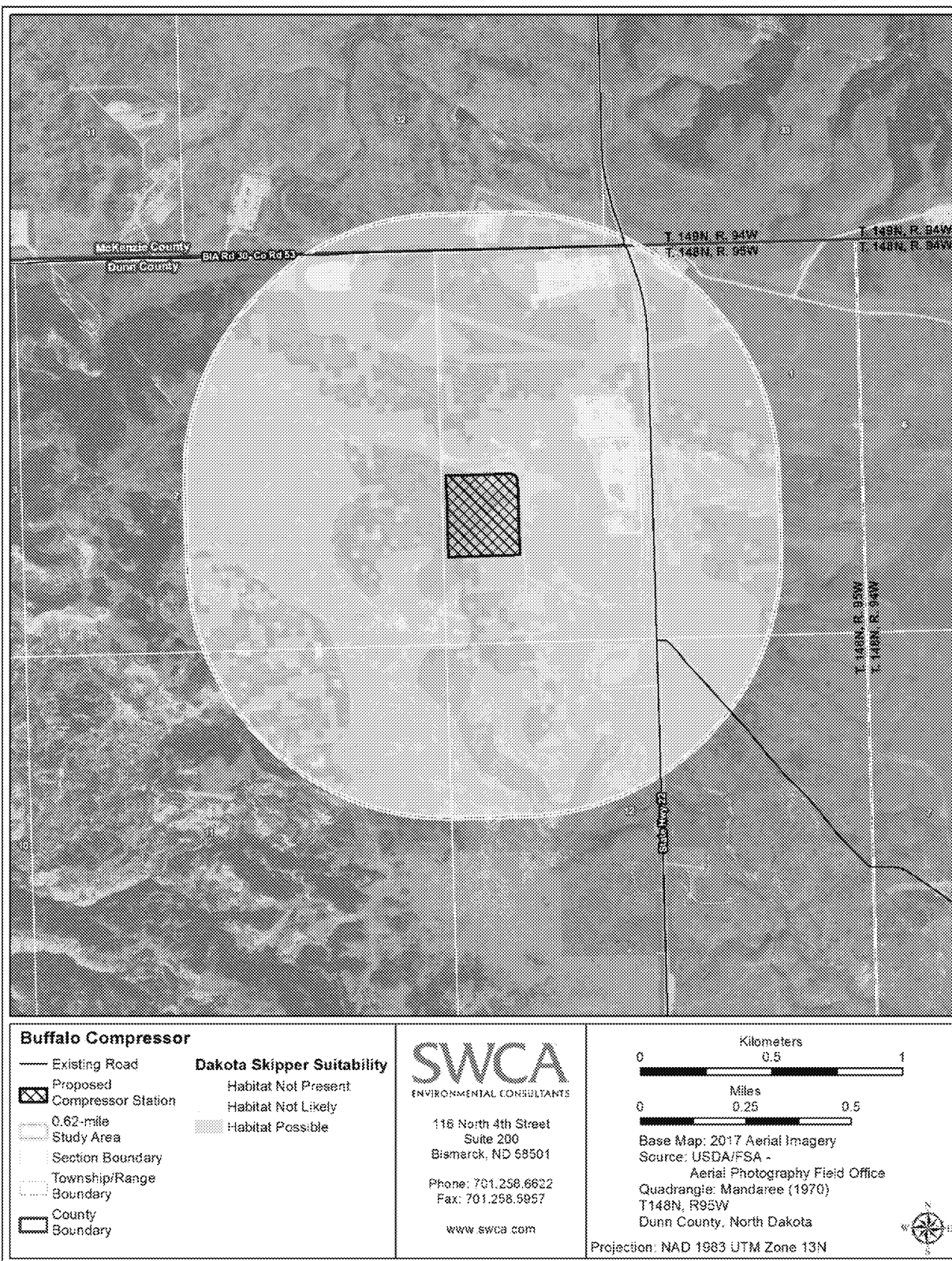


Figure 7. Dakota skipper habitat suitability model.

3.8 Dakota Skipper Designated Critical Habitat

On October 1, 2015, the USFWS proposed the designation of critical habitat for the Dakota skipper in 21 counties across its range, and the final ruling became effective on November 2, 2015 (USFWS 2015b). Five of those counties are in North Dakota (80 *Federal Register* 59247).

Three units of proposed critical habitat occur west of the Missouri River in Dunn County, North Dakota. Dakota Unit 10 (Eagle Nest Butte) is located in the southwest corner of the Reservation. The prognosis for the persistence of the Eagle Nest Butte population is uncertain because the presumed breeding area at this site historically encompasses less than 10 acres (Royer et al. 2014). Proposed Units 11 (McKenzie Pasture 12 East) and 12 (McKenzie Pasture 12 West) are located on the Little Missouri National Grassland, also in McKenzie County. Based on a 2014 survey, the Dakota skipper should be able to persist in Units 11 and 12 due to the presence of suitable habitat (Royer et al. 2014).

Dakota skippers are no longer found in Illinois and Iowa, and are present only in scattered, mostly isolated, sites in Minnesota, the Dakotas, and southern Canada. The most significant populations may be in western Minnesota, northeastern South Dakota, north-central North Dakota, and southern Manitoba (USFWS 2015c). Currently, there are no estimates of species abundance; however, adult skippers were encountered in Units 11 and 12 during surveys in July 2014 (Royer et al. 2014).

The study area does not contain designated critical habitat for Dakota skipper. The nearest critical habitat unit (Unit 11) is located approximately 28 miles north of the study area, and Unit 12 is located approximately 32 miles northwest (see Figure 6).

3.9 Rufa Red Knot

Federal Status: Threatened

The rufa red knot is a medium-sized shorebird approximately 9 to 11 inches tall with breeding plumage consisting of red around the face and a prominent stripe above the eye, breast, and upper belly and non-breeding plumage of dusky gray and white. The USFWS determined a threatened species status for the rufa red knot, and the final rule became effective on January 12, 2015 (79 *Federal Register* 73705).

The primary reasons for decline of this species are reduced food supplies in Delaware Bay due to commercial harvest of horseshoe crabs and areas of range loss due to rising sea levels, shorelines projects, and development (USFWS 2013b). The rufa red knot breeds in the Canadian Arctic and migrates 19,000 miles to winter on the U.S. Gulf Coast and in South America. The species generally occurs along the ocean coasts during migration, but a small number have been reported across the interior United States.

Lake Sakakawea is a known, but rare, stopover area for the rufa red knot. The rufa red knot has been known to stopover during migration on sandbars and shorelines of Lake Sakakawea, the main stem of the Missouri River, and pothole wetlands in North Dakota. Spring migration for shorebirds in North Dakota, including the rufa red knot, occurs between mid-March and early May. Fall migration occurs between mid-September and mid-November.

There are no known records of rufa red knot in the project vicinity; however, this species could use habitat along Lake Sakakawea, which is approximately 30.41 river-miles southeast of the proposed compressor station, as a stopover during migration. No rufa red knots were observed within the study area during SWCA's surveys; however, surveys were conducted outside of the migration period.

3.10 Northern Long-eared Bat

Federal Status: Threatened

On May 4, 2015, the USFWS listed the northern-long eared bat as threatened under the ESA (USFWS 2013c). USFWS also issued an interim rule pursuant to Section 4(d) of the ESA in conjunction with the final rule to list the species as threatened. This ruling became final on January 14, 2016 and became effective February 14, 2016 (81 *Federal Register* 1900–1923). For areas of the country not affected by white-nose syndrome (i.e., areas outside the 150-mile white-nose syndrome buffer zone), including all of North Dakota, the 4(d) rule exempts all incidental take. This medium-sized bat ranges across the eastern and north-central United States and all of the Canadian provinces (USFWS 2016d). Throughout most of this species' range, populations are patchily distributed. They emerge at dusk to fly through the understory of forested hillsides and ridges, feeding on insects.

Most records of northern long-eared bats are from winter hibernacula surveys, with more than 780 hibernacula identified within the United States. No known hibernacula are located in North Dakota, due either to a lack of suitable hibernacula present or to a lack of survey efforts (USFWS 2013c). This bat species occupies a wide range of rocky and forested habitats. Suitable winter habitat contains large caves and mines (USFWS 2016d). Summer day roosts include abandoned buildings, bridges, hollow trees, stumps, under loose bark, and rock fissures (Jones and Choate 1978).

Northern long-eared bats are not known to occur in the study area, although species-specific surveys have not been conducted. Suitable winter habitat for northern long-eared bats does not occur in the study area, but nearby woody vegetation can act as suitable summer day roosts. One patch of woody vegetation was identified within the study area during SWCA's surveys (see Figure 3). The study area is outside of the white-nose syndrome buffer zone imposed in the 4(d) rule. No northern long-eared bats were observed within the study area during SWCA's surveys, and there are no documented occurrences of this species in the study area.

3.11 Black-Footed Ferret

Federal Status: Endangered

Black-footed ferrets are nocturnal, solitary carnivores of the weasel family that have been largely extirpated from the wild primarily due to range-wide decimation of the black-tailed prairie dog (*Cynomys ludovicianus*) ecosystem (Kotliar et al. 1999). The species has been listed by the USFWS as endangered since 1967 and has been the object of extensive re-introduction programs (USFWS 2015d). Ferrets inhabit the extensive prairie dog (*Cynomys* sp.) complexes of the Great Plains, which are typically composed of several smaller colonies in proximity to one another, providing a sustainable prey base. The Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act (USFWS 1989) states that ferrets require black-tailed prairie dog or other prairie dog species' towns or complexes greater than 80 acres in size, and towns of this dimension may be important for ferret recovery efforts (USFWS 1988b). Prairie dog towns of this size were not observed in the study area during SWCA's surveys. Black-tailed prairie dog colonies exist on the Reservation, but these are too small and isolated to support any populations of black-footed ferrets. There have been no reported sightings of ferrets on the Reservation (BIA 2014).

4 IDENTIFIED STRESSORS AND EFFECTS TO FEDERALLY LISTED SPECIES

This section discusses the effects of construction of the proposed Buffalo compressor station on federally listed species, and designated critical habitat, in the study area. Identified stressors are described below.

Approximately 20 acres of permanent ground disturbance and vegetation removal would occur. Changes in water quality or quantity could occur if a spill of fuel or chemicals were to occur while constructing the compressor station. Temporary air quality impacts from equipment and generator exhaust needed for the compressor station construction would contribute to the release of greenhouse gases. Additional light disturbance may occur if construction of the compressor station occurs at night. Behavior of some wildlife species is altered by night lighting; however, this effect would be temporary. Noise from the proposed project would include additional vehicle traffic around the project area and construction of the proposed compressor station. Given the short duration of construction of the proposed compressor station (2–3 weeks) and the implementation of BMPs and mitigation measures described in Section 1.3, impacts are expected to be minimal.

4.1 Gray Wolf

4.1.1 Direct Effects

The occurrence of the gray wolf in the study area is highly unlikely. Due to increased human activity associated with construction of the proposed Buffalo compressor station within the study area, an individual would likely avoid the machinery and increased human presence. Because the location of the proposed compressor station is near existing disturbance from oil and gas development, and considering the rarity of an occurrence of the species in the vicinity, direct effects to the gray wolf are not anticipated.

4.1.2 Indirect Effects

Indirect effects to the gray wolf from the proposed project could include a minimal risk of disruption to travel patterns due to the increase of human activity in the area. The rarity of the species in the area does not discount indirect effects but does reduce the risk of indirect effects to a negligible level. Construction of the proposed Buffalo compressor station is anticipated to have no indirect effects on the gray wolf.

4.1.3 Cumulative Effects

No direct or indirect effects to the gray wolf would occur from the proposed project. Accordingly, the construction and operation of the proposed Buffalo compressor station are not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.1.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the gray wolf.

4.2 Whooping Crane

4.2.1 Direct Effects

The whooping crane migration periods are between March and May (spring) and September and November (fall). Whooping cranes prefer to roost in wetlands lacking tall emergent vegetation near agricultural fields. Whooping cranes that have been sighted in the past on Lake Sakakawea prefer isolated islands and beaches in areas with low disturbance.

A whooping crane is very unlikely to choose an area near the compressor station due to lack of preferred foraging or roosting habitat and the presence human disturbance. As per the USFWS Standard Conditions and Recommendations (USFWS 2017b), work would cease and the USFWS would be contacted if any whooping cranes are observed within 1 mile of the project area. In coordination with the USFWS, work may resume when the crane(s) has left the area. Considering the remote possibility that a whooping crane would choose to roost near the proposed compressor station, implementation of this BMP would prevent direct effects to the whooping crane.

4.2.2 Indirect Effect

As discussed above, a whooping crane is very unlikely to occur in the project area due to very little roosting habitat and the presence of human disturbance. Although two wetlands meet the habitat suitability parameters, the nearest whooping crane siting to the action area is 14.6 miles southwest. Indirect effects from increased human activity at the project location would be minimal. Therefore, any indirect effects to the whooping crane would be very minor.

4.2.3 Cumulative Effects

No direct or indirect effects to the whooping crane would occur from the construction and operation of the proposed Buffalo compressor station. Accordingly, the proposed project is not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.2.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the whooping crane.

4.3 Interior Least Tern

4.3.1 Direct Effects

Migrating and foraging least terns could visit wetlands near the study area; however, due to lack of suitable nesting habitat, nesting would not be expected in the study area. The study area does not support suitable habitat for the interior least tern, and there are no documented occurrences of this species in the study area. Therefore, direct effects to the interior least tern are not anticipated.

4.3.2 Indirect Effects

As discussed above, least terns are very unlikely to occur in the project area due to lack of roosting and foraging habitat and the presence of human disturbance. Indirect effects from increased human activity at

the project location would be minimal. Therefore, any indirect effects to the least tern would be very minor to non-existent.

4.3.3 Cumulative Effects

No direct or indirect effects to interior least tern are expected from the construction and operation of the proposed Buffalo compressor station. Accordingly, the proposed project is not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.3.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the least tern.

4.4 Pallid Sturgeon

4.4.1 Direct Effects

The proposed Buffalo compressor station would be located 30.41 river-miles from Lake Sakakawea. The study area lacks the swift waters of large, turbid, free-flowing rivers with braided channels required by pallid sturgeon. Given the distance to Lake Sakakawea and the lack of suitable habitat near the action area, direct effects to the pallid sturgeon are not anticipated.

4.4.2 Indirect Effects

Potential pollution and sedimentation occurring within the project area are concerns for downstream populations of endangered pallid sturgeon. However, implementation of BMPs and mitigation measures described in Section 1.3 would minimize the potential for sedimentation and pollution from spills. Consequently, activities associated with the construction and operation of the proposed Buffalo compressor station are not anticipated to adversely affect water quality and subsequently the pallid sturgeon.

4.4.3 Cumulative Effects

No direct or indirect effects to the pallid sturgeon are expected from the proposed project. Accordingly, the proposed project is not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.4.4 Effects Determination

Based on the analysis of direct, indirect, and cumulative effects, the proposed project would have **no effect** on the pallid sturgeon.

4.5 Piping Plover

4.5.1 Direct Effects

Suitable shoreline habitats for breeding and nesting plovers were not observed within the study area during SWCA's surveys, and Lake Sakakawea is approximately 30.41 river-miles southeast of the project area. Therefore, direct effects to the piping plover are not anticipated.

4.5.2 Indirect Effects

To reduce the potential of increasing the number of piping plover predators near the project area, portable dumpsters would be used for the disposal of all project-related trash. All trash would be hauled off-site, and no burying or burning of trash would be allowed. With implementation of the measures described above and in Section 1.3, indirect effects to the piping plover are not anticipated.

4.5.3 Cumulative Effects

No direct and indirect effects to the piping plover would occur from the construction and operation of the proposed Buffalo compressor station. Accordingly, the proposed project is not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.5.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the piping plover.

4.6 Piping Plover Designated Critical Habitat

4.6.1 Direct Effects

Critical habitat is located approximately 30.41 river-miles southeast of the proposed compressor station location, therefore direct effects to piping plover critical habitat are not expected.

4.6.2 Indirect Effects

No indirect effects are expected to piping plover designated critical habitat.

4.6.3 Cumulative Effects

No direct and indirect effects to piping plover designated critical habitat are expected to occur. Accordingly, the proposed project would not contribute to the effects imposed on critical habitat by other past, present, and future activities.

4.6.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would **not result in the destruction or adverse modification** of piping plover designated critical habitat.

4.7 Dakota Skipper

4.7.1 Direct Effects

Suitable habitat for Dakota skipper was not observed during SWCA's surveys. No direct effects to the species are expected.

4.7.2 Indirect Effects

No indirect effects are expected to the Dakota skipper.

4.7.3 Cumulative Effects

No direct effects or indirect effects to the Dakota skipper are expected from the construction and operation of the proposed Buffalo compressor station. Therefore, the proposed project would not contribute to the cumulative effects to habitat or individuals of the species in combination with other past, present, and future activities.

4.7.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the Dakota skipper.

4.8 Dakota Skipper Designated Critical Habitat

4.8.1 Direct Effects

Two critical habitat units are located in McKenzie County. Critical habitat Unit 11 is approximately 28 miles north of the project area at its closest point, and Unit 12 is approximately 32 miles northwest at its closest point. Given the distance to the nearest designated critical habitat, the proposed project does not have the potential to directly affect designated critical habitats for the Dakota skipper.

4.8.2 Indirect Effects

Because of the lack of suitable habitat in the study area, no indirect effects are expected to the Dakota skipper designated critical habitat.

4.8.3 Cumulative Effects

As a result of the analysis, no direct or indirect effects to Dakota skipper designated critical habitat have been identified to result from the proposed project. Therefore, construction and operation of the proposed Buffalo compressor station is not expected to contribute to the effects imposed on designated critical habitat by other past, present, and future activities.

4.8.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would **not result in the destruction or adverse modification** of Dakota skipper designated critical habitat.

4.9 Rufa Red Knot

4.9.1 Direct Effects

The project area is located approximately 30.41 river-miles from Lake Sakakawea. Given the distance to Lake Sakakawea and the lack of suitable habitat in the study area, direct effects to the rufa red knot are not anticipated.

4.9.2 Indirect Effect

Potential pollution and sedimentation occurring within the project area are concerns for downstream potential habitat. However, implementation of BMPs and mitigation measures described in Section 1.3 would minimize the potential for sedimentation and pollution from spills. Activities associated with the construction of the proposed compressor station are not anticipated to adversely affect water quality and subsequently potential habitat for rufa red knot. No indirect effects are expected to rufa red knot.

4.9.3 Cumulative Effects

No effects to the rufa red knot are expected. Therefore, the proposed project is not expected to contribute to the effects imposed on this species by other past, present, and future activities.

4.9.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project is expected to have **no effect** to the rufa red knot.

4.10 Northern Long-eared Bat

4.10.1 Direct Effects

The woody vegetation within the project area and larger deciduous trees adjacent to the project area could provide suitable roosting habitat (see Figure 3). Wetlands and streams in the area could also provide foraging habitat. To construct the proposed compressor station, Targa would need to remove woody vegetation within the project area, causing potential direct effects to the species. However, all trees would be removed outside of the summer roosting period (April–September) to avoid direct impacts to individuals. No known hibernacula are located in North Dakota, and the study area is outside of the white-nose syndrome buffer zone imposed in the 4(d) rule. In addition, a final rule pursuant to Section 4(d) of the ESA became effective on February 14, 2016, which exempts all incidental take of this species within North Dakota. Therefore, no direct effects are anticipated.

4.10.2 Indirect Effects

Noise and human activity could cause northern long-eared bats to avoid suitable roosting habitat adjacent to the project area; however, this impact would be temporary due to the short duration of construction and would be minimized with implementation of the BMPs listed in Section 1.3. However, a small loss of suitable habitat would occur due to construction activities. No other indirect effects to northern long-eared bats, their forage base, or suitable habitat are expected from the proposed project.

4.10.3 Cumulative Effects

No direct effects to northern long-eared bats, and minor and temporary indirect effects to suitable habitat, are expected as a result of the proposed project. Therefore, construction and operation of the proposed Buffalo compressor station would not contribute to cumulative effects in combination with other past, present, and future activities.

4.10.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project may affect, but is not likely to adversely affect the northern long-eared bat.

4.11 Black-footed Ferret

4.11.1 Direct Effects

Due to a lack of suitable habitat within the project area, the proposed project would not affect the black-footed ferret. Therefore, no direct effects to the black-footed ferret would occur from construction and operation of the proposed Buffalo compressor station.

4.11.2 Indirect Effects

No indirect effects to the black-footed ferret would occur from the proposed project.

4.11.3 Cumulative Effects

No direct or indirect effects to the black-footed ferret are expected as a result of the proposed project. Therefore, the proposed project would not contribute to cumulative effects in combination with other past, present, and future activities.

4.11.4 Effects Determination

Based on the analysis of indirect, direct, and cumulative effects, the proposed project would have **no effect** on the black-footed ferret.

5 LITERATURE CITED

- Armbruster, M., and A. Farmer. 1981. Draft sandhill crane habitat suitability index model. In *Proceedings of the 1981 Crane Workshop*, edited by J.C. Lewis, pp. 136–143. Tavernier, Florida.
- Armbruster, M.J. 1990. Characterization of habitat used by whooping cranes during migration. *Biological Report* 90(4):1–16.
- Austin, J., and A. Richert. 2001. *A Comprehensive Review of the Observational and Site Evaluation Data of Migrant Whooping Cranes in the United States, 1943–1999*. Jamestown, North Dakota: U.S. Geological Survey, Northern Prairie Wildlife Research Center; Lincoln: State Museum, University of Nebraska.
- . 2005. Patterns of habitat use by whooping cranes during migration: summary from 1977–1999 site evaluation data. *Proceedings of the North American Crane Workshop* 9:79–104.
- Bureau of Indian Affairs (BIA). 2014. *Programmatic Biological Assessment and Biological Evaluation for Fort Berthold Indian Reservation Oil and Gas Development*. Aberdeen, South Dakota: U.S. Bureau of Indian Affairs Great Plains Region. May 2014.
- . 2015. *Revised Addendum to: Programmatic Biological Assessment and Biological Evaluation for Fort Berthold Indian Reservation Oil and Gas Development, May 2014 and August 2015*. Prepared for the U.S. Fish and Wildlife Service. Laramie, Wyoming: Trihydro Corporation.
- Bramblett, R.G. 1996. Habitats and movements of pallid and shovelnose sturgeon in the Yellowstone and Missouri Rivers, Montana and North Dakota. Ph.D. dissertation, Montana State University, Bozeman.
- Canadian Wildlife Service and U.S. Fish and Wildlife Service (USFWS). 2007. *International Recovery Plan for the Whooping Crane*. Ottawa, Canada: Recovery of Nationally Endangered Wildlife (RENEW); Albuquerque, New Mexico: U.S. Fish and Wildlife Service.
- Dana, R. 1991. *Conservation Management of the Prairie Skippers Hesperia dacotae and Hesperia ottoe*. Station Bulletin 594-1991 (AD-SB-5511-S0), Minnesota Agricultural Experiment Station, University of Minnesota, St. Paul.
- Hagen, S.K., P.T. Isakson, and S.R. Dyke. 2005. *North Dakota Comprehensive Wildlife Conservation Strategy*. Bismarck: North Dakota Game and Fish Department.
- Howe, M.A. 1987. Habitat use by migrating whooping cranes in the Aransas-Wood Buffalo Corridor. In *Proceedings of the 1985 Crane Workshop*, edited by C. Lewis and J.W. Ziewitz, pp. 303–311. Grand Island, Nebraska: Platte River Whooping Crane Habitat Maintenance Trust and USFWS.
- . 1989. *Migration of Radio-Marked Whooping Cranes from the Aransas-Wood Buffalo Population: Patterns of Habitat Use, Behavior, and Survival*. USFWS Technical Report. Washington, D.C.: U.S. Department of the Interior, Fish and Wildlife Service.
- Johns, B., E. Woodsworth, and E. Driver. 1997. Habitat use by migrant whooping cranes in Saskatchewan. *Proceedings of the North American Crane Workshop* 7:123–131.
- Jones, J., and J.R. Choate. 1978. Distribution of two species of long-eared bats of the genus *Myotis* on the Northern Great Plains. *Prairie Naturalist* 10(2):49–52.

- Kotliar, N.B., B.W. Baker, A.D. Whicker, and G. Plumb. 1999. A critical review of assumptions about the prairie dog as a keystone species. *Environmental Management* 24(2):177–192.
- Licht, D.S., and S.H. Fritts. 1994. Gray wolf (*Canis lupus*) occurrences in the Dakotas. *American Midland Naturalist* 132:74–81.
- Licht, D.S., and L.E. Huffman. 1996. Gray wolf status in North Dakota. *The Prairie Naturalist* 28(4):169–174.
- McCabe, T.L. 1981. The Dakota skipper (*Hesperia dacotae* [Skinner]): range and biology, with special reference to North Dakota. *Journal of the Lepidopterists' Society* 35(3):179–193.
- Root, B.G., M.R. Ryan, and P.M. Mayer. 1992. Piping plover survival in the Great Plains. *Journal of Field Ornithology* 63(1):10–15.
- Royer, R., and G. Marrone. 1992. *Conservation Status of the Dakota Skipper (Hesperia dacotae) in North and South Dakota*. Denver, Colorado: U.S. Fish and Wildlife Service. As cited in 78 *Federal Register* 63573.
- Royer, R.A., M.R. Royer, and E.A. Royer. 2014. *Dakota Skipper Field Survey and Habitat Assessment at Twelve North Dakota Sites during the 2014 Season*. Division of Science, Minot State University. October 1, 2014.
- Targa Badlands, LLC (Targa). 2013. *Emergency Response Plan*. Targa Resources, LLC.
- U.S. Fish and Wildlife Service (USFWS). 1978. Reclassification of the Gray Wolf in the United States and Mexico, with Determination of Critical Habitat in Michigan and Minnesota. *Federal Register* 43(47):9607–9615.
- . 1985a. Interior Population of the Least Tern. *Federal Register* 50 FR 21784–21792. May 28, 1985.
- . 1985b. Endangered and Threatened Wildlife and Plants: Determination of Endangered and Threatened Status for the Piping Plover. *Federal Register* 50 (238):50726–50734.
- . 1988a. *Great Lakes and Northern Great Plains Piping Plover Recovery Plan*. Twin Cities, Minnesota: U.S. Fish and Wildlife Service.
- . 1988b. *Black-footed Ferret Recovery Plan*. Denver, Colorado: U.S. Fish and Wildlife Service.
- . 1989. *Black-footed Ferret Survey Guidelines for Compliance with the Endangered Species Act*. Denver, Colorado, and Albuquerque, New Mexico: U.S. Fish and Wildlife Service.
- . 1990a. *Interior Population of the Least Tern Recovery Plan*. Twin Cities, Minnesota: U.S. Fish and Wildlife Service.
- . 1990b. Endangered and Threatened Wildlife and Plants; Determination of Endangered Status for the Pallid Sturgeon. *Federal Register* 55(173):36641–36647.
- . 1998. *Endangered Species Consultation Handbook: Procedures for Conducting Consultation and Conference Activities Under Section 7 of the Endangered Species Act*. March 1998.

- . 2002. Designation of Critical Habitat for the Northern Great Plains Breeding Population of the Piping Plover; Final Rule. *Federal Register* 67(176):57637–57717. September 11, 2002.
- . 2007. *Pallid Sturgeon (Scaphirhynchus albus) 5-year Review Summary and Evaluation*. U.S. Fish and Wildlife Service, Pallid Sturgeon Recovery Coordinator. Billings, Montana.
- . 2011. Data from the 2011 International Piping Plover Census. Data Series 922. Available at: <http://pubs.usgs.gov/ds/0922/pdf/ds922.pdf>. Accessed December 2018.
- . 2013a. Whooping crane. Available at: <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B003>. Accessed December 2018.
- . 2013b. Endangered and Threatened Wildlife and Plants; Proposed Threatened Status for the Rufa Red Knot (*Calidris canutus rufa*). *Federal Register* 78(189):60024–60098.
- . 2013c. Endangered and Threatened Wildlife and Plants; 12-month Finding on a Petition to List the Eastern Small-footed Bat and the Northern Long-eared Bat as Endangered or Threatened Species; Listing the Northern Long-eared Bat as an Endangered Species; Proposed Rule. *Federal Register* 78(191):61046–61080.
- . 2014. Dakota skipper (*Hesperia dacotae*). North Dakota Field Office, Mountain Prairie Region. Available at: http://www.fws.gov/northdakotafieldoffice/endspecies/species/dakota_skipper.htm. Accessed December 2018.
- . 2015a. *Dakota Skipper Conservation Guidelines*. January. Available at: https://www.fws.gov/mountain-prairie/pressrel/documents/ESD_EA/Appendix_B_DakotaSkipperConservationGuidelinesJan2015Update.pdf. Accessed December 2018.
- . 2015b. Designation of Critical Habitat for Dakota Skipper and Poweshiek Skipperling; Final Rule. *Federal Register* 80(190). October 1, 2015. Available at: <https://www.federalregister.gov/articles/2015/10/01/2015-24184/endangered-and-threatened-wildlife-and-plants-designation-of-critical-habitat-for-the-dakota-skipper>. Accessed December 2018.
- . 2015c. County occurrence of endangered, threatened, and candidate species and designated critical habitat in North Dakota. October 30, 2015. Available at: http://www.fws.gov/northdakotafieldoffice/county_list.htm. Accessed December 2018.
- . 2015d. Black-footed ferret. Available at: <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=A004>. Accessed December 2018.
- . 2016a. *Whooping Crane Survey Results: Winter 2015–2016*. Available at: https://www.fws.gov/uploadedFiles/Region_2/NWRS/Zone_1/Aransas-Matagorda_Island_Complex/Aransas/Sections/What_We_Do/Science/Whooping_Crane_Update_s_2013/WHCR%20Update%20Winter%202015-2016.pdf. Accessed December 2018.
- . 2016b. Interior least tern (interior population). Available at: <https://www.fws.gov/midwest/endangered/birds/leastern/IntLeastTernFactSheet.html>. Accessed December 2018.
- . 2016c. Piping plover. Available at: <http://www.fws.gov/mountain-prairie/species/birds/pipingplover>. Accessed December 2018.

- . 2016d. *Northern Long-eared Bat Fact Sheet*. Midwest Endangered Species. Available at: <https://www.fws.gov/midwest/endangered/mammals/nleb/nlebFactSheet.html>. Accessed December 2018.
- . 2017a. Gray wolf. Available at: <https://ecos.fws.gov/ecp0/profile/speciesProfile?scode=A00D>. Accessed December 2018.
- . 2017b. Whooping crane. Midwest Endangered Species. Available at: <https://www.fws.gov/midwest/whoopingcrane/>. Accessed December 2018.
- U.S. Geological Survey. 2006. Data from the 2006 International Piping Plover Census. Data Series 426. Available at: <http://pubs.usgs.gov/ds/426/pdf/ds426.pdf>. Accessed December 2018.
- Ward, J., and S. Anderson. 1987. Roost site use versus preference by two migrating whooping cranes. In *Proceedings of the 1985 International Crane Workshop*, edited by J.C. Lewis, pp. 283–288. Grand Island, Nebraska: U.S. Fish and Wildlife Service.

APPENDIX A

Site Photographs



Figure 1A. Overview of the vegetation within the Buffalo compressor station, facing north (photograph taken November 13, 2018).



Figure 2A. Overview of the vegetation within the Buffalo compressor station, facing east (photograph taken November 13, 2018).



Figure 3A. Overview of the vegetation within the Buffalo compressor station, facing south (photograph taken November 13, 2018).



Figure 4A. Overview of the vegetation within the Buffalo compressor station, facing west (photograph taken November 13, 2018).



Figure 5A. Overview of the woody vegetation within the Buffalo compressor station, facing west (photograph taken November 13, 2018).